

May 8, 2000

Mr. G. Rainey, President
PECO Nuclear
Nuclear Group Headquarters
Correspondence Control Desk
P. O. Box 195
Wayne, PA 19087-0195

**SUBJECT: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FINAL EXERCISE
REPORT FOR THE SEPTEMBER 14, 1999, LIMERICK GENERATING
STATION PLUME EXPOSURE PATHWAY EXERCISE**

Dear Mr. Rainey:

Enclosed is a letter from Mr. F. Kevin Koob, Chairman, Regional Assistance Committee, FEMA Region III, dated March 7, 2000, transmitting the FEMA report for the subject exercise to Mr. Robert Bores, Regional State Liaison Officer, NRC Region I.

There were four Deficiencies identified during the September 14, 1999, plume exposure pathway exercise which were successfully resolved on December 7, 1999, during a remedial exercise. Also, there were 32 Areas Requiring Corrective Action (ARCAs) identified during the September 14, 1999, exercise. Please provide assistance to offsite officials as they address and resolve the identified items on a timely basis.

If you have any questions concerning this enclosure, please contact David Silk at (610) 337-5372.

Sincerely,

/RA/

Richard J. Conte, Chief
Operational Safety Branch
Division of Reactor Safety

Docket Nos. 05000352, 05000353

Enclosure: FEMA Final Exercise Report for Limerick Generation Station

IE35

~~ML~~

Mr. G. Rainey

-2-

cc w/encl:

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Mr. Robert Bores
Regional State Liaison Officer
Division of Reactor Safety
Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 191406

Dear Bob:

Enclosed is a copy of the final report for the Limerick Generating Station (LGS), one-third-participation plume exposure pathway exercise of the offsite radiological emergency response plans site-specific to the LGS. The Commonwealth of Pennsylvania, the risk counties of Berks, Chester, and Montgomery, and the support counties of Bucks and Lehigh participated in the exercise. The Federal Emergency Management Agency Region III staff prepared the final exercise report. A copy of this report will be provided to the Commonwealth of Pennsylvania, and the United States Nuclear Regulatory Commission.

Four Deficiencies and 32 Areas Requiring Corrective Action were identified during this exercise. The description of the Deficiencies follows:

1. The first Deficiency resulted when a message to take potassium iodide (KI) was not received in Chester, Berks, and Montgomery counties. The Secretary of Health made the decision around 1940 for emergency workers to take KI in response to a dose projection in excess of 25 rem to an individual's thyroid. The message was sent at 1942 and received by Pennsylvania State Police (PSP) personnel at the access control points/traffic control points (ACP/TCP) and at Bucks County Emergency Operations Center (EOC). Pennsylvania Emergency Management Agency (PEMA) staff at the State EOC failed to send this message to the risk counties because of a breakdown in communications. (NUREG-0654, J.10.e. and J.10.f.)

2. The second Deficiency when Chester County emergency operations personnel failed, on three occasions, to transmit and confirm receipt of and broadcast of EAS messages with the following EAS stations: WPHT (1210 AM), WCOJ (1420 AM), and WPHE (690 AM). (References: Chester County RERP, pages 7 [7], 22 j. [5], E-3-3F, E-4-1B, E-4-3G, E-4-6 to 12; FEMA-REP-14, pages D.11-1 and D.11-2; and FEMA letter dated April 2, 1998 [revised February 2, 1999], Subject: *Guidance for Providing Emergency Information and Instructions to the Public for Radiological Emergencies Using the New Emergency Alert System.*)

The first Alert and Notification (A&N) sequence began at 1730 during the Alert ECL. Chester County decided to advise the public, by simulated activation of the EAS at 1743, that an incident had occurred at the LGS and that citizens should review emergency information contained in the telephone book and listen to the EAS station for official information and instructions.

The second A&N sequence began at 1945, during the General Emergency (GE) ECL. The decision was made to release a simulated EAS message at 1958 announcing that a (simulated) evacuation of residents within 10 miles of the LGS had been ordered by the Governor.

The third A&N sequence began at 2029, during the GE ECL. Chester County personnel announced that a simulated EAS message would be released at 2042 to repeat the information contained in the second A&N sequence EAS message.

There is no evidence to indicate that pre-scripted EAS messages were provided to the EAS stations, that receipt of the messages was verified, or that messages were broadcast and rebroadcast at regular intervals to ensure the public was informed of important emergency information. (NUREG-0654, E.5. and E.7.)

3. The third Deficiency resulted because Emergency operations were not adequately demonstrated by the Montgomery County Office of Emergency Preparedness (OEP) staff as follows:

OBJECTIVE 3

- ◆ When the OEP Coordinator recognized that the 15-minute requirement for preparing, transmitting, and broadcasting the EAS message (following siren activation at the initial A&N sequence) had not been met, he took no action. The Coordinator did not confer with his staff concerning what actions to take and did not call the State EOC to seek clarification concerning the activation.
- ◆ The current version of the RERP (Revision 0), dated June 1999, was not made available to the EOC staff. The reference copy of the RERP provided in the EOC (Revision 15) was out of date. The staff relied solely on their implementing procedures (IPs).
- ◆ No information regarding the purpose and maintenance of IPs is provided in the RERP. The IPs used by EOC staff are not clearly referenced in the plan; they are briefly addressed on pages iii and iv, where a footnote suggests that the IPs supersede the plan until IP changes are included in the next plan revision.

- ◆ A key resource used by the EOC staff, called the "Directory" (which is a supplement to the plan that contains important reference databases and lists), contains some inaccurate information because it is out of date.
- ◆ The current County RERP (June 1999, Revision 0) does not provide capacity information for each of the 13 monitoring/decontamination stations/mass care centers. It does provide the total capacity for all 13 designated facilities (page E12-2-1), but the capacity for each individual facility is not given. A table of capacities is available in a separate document (Attachment 2, MCC-IP-2-1, "Mass Care Activity Summary") that is not referenced in the plan. However, the total capacity for all 13 centers (5,050 persons), as indicated in Attachment 2, does not agree with the number needed (5,101 persons) or the total number available (5,250 persons) as stated in the plan.
- ◆ The OEP Coordinator meetings and briefings were not comprehensive or interactive. The few briefings that were provided were narrowly focused and did not solicit or provide an opportunity for input from the EOC staff. The Coordinator did not review EAS message and press release content with the PIO.
- ◆ Activity logs were not systematically maintained. Standard forms were not used in many cases, and those logs that were prepared (on note paper) often omitted identifying and other key information. IPs were not used; data were missing from most of the IPs. A log of EAS messages was not established and maintained.
- ◆ Several EOC staff did not follow their IPs, and plan requirements were not met. For example, RACES operators did not follow IP D-15 concerning the announcement on the RACES network of the Governor's declaration of "State of Disaster Emergency". The PIO did not maintain a log of information provided to the press. The radiological staff did not update weather information on the designated EOC display during the exercise (IPs B-17, C-19, D-19), and some municipalities did not receive regular updates on weather conditions, although the County has promised to provide such updates. This information is essential in assessing the potential for radiation exposure by emergency workers and the public. The rumor control number was not publicized in media briefings, EAS messages, or press releases (see Objectives 11 and 12). At the evacuation, the rumor control manager did not receive EAS messages and was unable to review them with staff – especially the evacuation EAS message.

OBJECTIVE 5

- ◆ The radiological briefing to EOC staff omitted information concerning emergency worker exposure limits and instructions on how to complete Dosimetry/KI Report Forms. Staff who were issued radiological equipment were unsure of their exposure limits, and the Dosimetry/KI Report Forms were not used to record any of the required information.
- ◆ According to the County RO and OEP Coordinator, the DRDs are placed in sealed boxes and changed out every four years. It is unclear, then, how the dosimeters can be leak tested annually as certified in PEMA's annual letter of certification to FEMA.
- ◆ Several OEP staff members stated that they have never received any training concerning radiological exposure control and use of radiological forms and equipment outside the context of REP exercises and drills.
- ◆ Written instructions regarding dosimetry reading procedures were not available for EOC staff. The County RERP (Section III.A, page E-13-2-2) states that dosimetry reading procedures "... are delineated in County and municipal procedures ..." However, the relevant section of the plan is not cited and is not available.

OBJECTIVE 11

- ◆ Some press releases disseminated following the EAS activations contained no supplemental information – they provided only the information contained in the original EAS message.
- ◆ Press releases contained no mention of changes in evacuation routes due to the closure of some plan-designated routes, although some EOC staff incorporated the closures into their exercise play.
- ◆ Press releases did not provide instructions for transients without shelter.
- ◆ The rumor control telephone number was not included in any of the press releases.
- ◆ Interviews with the EOC staff revealed that the policy of Montgomery County is not to provide livestock advisory information to the public but to provide it directly to farmers through the USDA Agricultural Extension Service. The PIO provided livestock advisory information to the media in Press Release #4. An adjacent county (Berks) does provide livestock advisory information in its press releases to the general public. These inconsistencies could result in confusion.

- ◆ Press releases with multiple pages were not paginated, follow-on pages were not date- and time-stamped, and they did not show the source of the message.
- ◆ The OEP Coordinator and his designated representative did not maintain a log of the EAS messages that were announced over KYW 1060. The PIO and rumor control managers were not provided with a copy of the evacuation EAS message (Attachment 4-3).

OBJECTIVE 12

- ◆ The press releases were not accurate or up to date, were not consistent with public information brochures, and did not include adequate information and instructions regarding protective actions.
- ◆ The media briefing provided inaccurate information or omitted key information concerning:
 - Evacuations routes (changes in evacuation routes were not given to the media).
 - Transients without shelter (no information was provided).
 - The rumor control telephone number (was not provided).
 - The current ECL (the media were informed that the LGS was at the SAE ECL when, in fact, it had been at the GE ECL for more than an hour).
 - A clear differentiation between new and old information was not made during media briefings. (NUREG-0654, A.1.b. A.2.a., K.3.a., K.3.b., K.4, E.5., E.7., G.4.a., G.4.b., and H.10.)

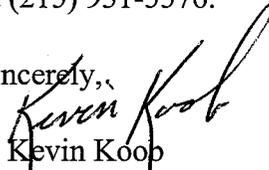
4. The final Deficiency occurred when in Montgomery County, the first A&N sequence which began at 1730 during the Alert ECL, was not completed within the required 15 minutes because of communication failures. Therefore, the Montgomery County OEP Coordinator did not become aware of the EAS activation until six minutes after the 15-minute window had closed, and the EAS message was never sent. (NUREG-0654, E.6.)

On December 7, 1999, a remedial exercise was conducted to specifically address all elements of the four Deficiencies cited during the September 14, 1999, exercise. Participants in the remedial exercise demonstrated their abilities and **successfully resolved the four Deficiencies.**

Based on the results of the September 14, 1999, and the remedial exercise of December 7, 1999, the offsite radiological emergency response plans and preparedness for the Commonwealth of Pennsylvania and the affected local jurisdictions, site specific to the LGS, can be implemented and are adequate. The plans provide reasonable assurance that appropriate measures can be taken in the event of a radiological emergency at the site.

If you have any questions, please contact me at (215) 931-5576.

Sincerely,



F. Kevin Koop
Chairperson, Regional
Assistance Committee

Enclosure



Final Exercise Report

Limerick Generating Station

Licensee: PECO Energy Company

Exercise Date: September 14, 1999

Report Date: March 1, 2000

**FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION III
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TABLE OF CONTENTS

	Page
I. EXECUTIVE SUMMARY	1
II. INTRODUCTION.....	2
III. EXERCISE OVERVIEW.....	4
A. Plume Emergency Planning Zone Description	4
B. Exercise Participants	5
C. Exercise Time Line	12
IV. EXERCISE EVALUATION AND RESULTS	16
A. Summary Results of Exercise Evaluation	16
B. Status of Jurisdictions Evaluated.....	24
1. COMMONWEALTH OF PENNSYLVANIA.....	26
1.1 Emergency Operations Center/Commonwealth Emergency News and Information Center.....	26
1.2 Emergency News Center.....	29
1.3 Emergency Operations Facility (BRP).....	29
1.4 Field Monitoring Team A.....	29
1.5 Field Monitoring Team B	30
1.6 State Traffic/Access Control (PSP)	31
2. RISK JURISDICTIONS.....	32
2.1 BERKS COUNTY.....	32
2.1.1 Emergency Operations Center	32
2.1.2 Emergency Worker Monitoring/Decontamination Station....	34
2.1.3 Reception Center	35
2.1.4 Monitoring/Decontamination/Mass Care Center.....	35
2.1.5 Amity Township EOC	36
2.1.6 Boyertown Borough EOC.....	36
2.1.7 Douglass Township EOC	37

TABLE OF CONTENTS

	Page
2.2 CHESTER COUNTY	38
2.2.1 Emergency Operations Center	38
2.2.2 Emergency Worker Monitoring/Decontamination Station	43
2.2.3 Reception Center	44
2.2.4 Monitoring/Decontamination/Mass Care Center	45
2.2.5 East Pikeland Township EOC	47
2.2.6 East Vincent Township EOC	47
2.2.7 North Coventry Township EOC	47
2.2.8 Phoenixville Borough EOC	48
2.2.9 Uwchlan Township EOC	48
2.3 MONTGOMERY COUNTY	49
2.3.1 Emergency Operations Center	49
2.3.2 Emergency Worker Monitoring/Decontamination Station	61
2.3.3 Reception Center	62
2.3.4 Monitoring/Decontamination/Mass Care Center	63
2.3.5 Green Lane Borough/Marlborough Township EOC	64
2.3.6 Lower Frederick Township EOC	65
2.3.7 Lower Providence Township EOC	67
2.3.8 Pottstown Borough EOC	67
2.3.9 Schwenksville Borough EOC	67
2.3.10 Upper Frederick Township EOC	68
2.3.11 West Pottsgrove Township EOC	68
3. SUPPORT JURISDICTIONS	69
3.1 STATE AREA OFFICES	69
3.1.1 State Eastern Area EOC	69
3.2 BUCKS COUNTY	70
3.2.1 Emergency Operations Center	70
3.2.2 Reception Center	70
3.2.3 Monitoring/Decontamination/Mass Care Center	71
3.3 LEHIGH COUNTY	72
3.3.1 Emergency Operations Center	72
3.3.2 Reception Center	73
3.3.3 Monitoring/Decontamination/Mass Care Center	73

TABLE OF CONTENTS

	Page
4. SCHOOL DISTRICTS	74
4.1 BERKS COUNTY.....	74
4.1.1 Boyertown Area School District.....	74
4.1.2 Daniel Boone Area School District	75
4.2 CHESTER COUNTY.....	75
4.2.1 Downingtown Area School District.....	75
4.2.2 Great Valley School District.....	75
4.2.3 Owen J. Roberts School District.....	76
4.2.4 Phoenixville Area School District	77
4.3 MONTGOMERY COUNTY	77
4.3.1 Methacton Area School District	77
4.3.2 Perkiomen Valley School District	77
4.3.3 Pottsgrove School District	78
4.3.4 Pottstown Area School District	78
4.3.5 Souderton Area School District	79
4.3.6 Spring-Ford Area School District	79
4.3.7 Upper Perkiomen Valley School District	80

List of Appendices

APPENDIX 1 –	ACRONYMS AND ABBREVIATIONS.....	81
APPENDIX 2 –	EXERCISE EVALUATORS AND TEAM LEADERS.....	83
APPENDIX 3 –	EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT	88
APPENDIX 4 –	EXERCISE SCENARIO	109
APPENDIX 5 –	PLANNING ISSUES.....	112
APPENDIX 6 –	ADDITIONAL PRIOR ISSUES.....	115

List of Tables

Table 1 –	Exercise Time Line.....	13
Table 2 –	Summary Results of Exercise Evaluation	17

I. EXECUTIVE SUMMARY

On September 14, 1999, the Federal Emergency Management Agency (FEMA), Region III, conducted an exercise in the plume exposure pathway emergency planning zone (EPZ) around the Limerick Generating Station (LGS). FEMA also conducted an out-of sequence school drill on the morning of September 14, 1999. The purpose of the exercises was to assess the level of State and local preparedness in responding to a radiological emergency. These exercises were held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

The most recent previous exercise at this site was conducted on June 24, 1997.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise in the Commonwealth of Pennsylvania; the risk jurisdictions of Berks, Chester, and Montgomery counties; the support jurisdictions of Bucks and Lehigh counties; and 43 participating municipalities.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

This report contains the final evaluation of the biennial exercise and evaluations of the following out-of-sequence activities: school drill activities, conducted on the morning of September 14, 1999; support county activities, including reception, mass care and radiation monitoring/decontamination, demonstrated during the evening of September 14, 1999; and traffic and access control activities, also demonstrated during the evening of September 14, 1999.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. Four Deficiencies and 32 Areas Requiring Corrective Action (ARCA) were identified as a result of this exercise and the remedial conducted on December 7, 1999. There were 33 prior issues evaluated during this exercise; 21 were resolved. A total of five planning issues were also identified during the exercise and the remedial conducted on December 7, 1999.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear planning and response. FEMA's activities are conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351, and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program established following the Three Mile Island Nuclear Power Station accident in March 1979.

FEMA Rule 44 CFR 350 establishes the policies and procedures for FEMA's initial and continued approval of State and local governments' radiological emergency planning and preparedness for commercial nuclear power plants. This approval is contingent, in part, on State and local government participation in joint exercises with licensees.

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- Taking the lead in offsite emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA (Federal Register, Vol. 58, No.176, September 14, 1993); and
- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Agriculture,
 - U.S. Department of Commerce,
 - U.S. Department of Energy,
 - U.S. Department of Health and Human Services,
 - U.S. Department of the Interior,
 - U.S. Department of Transportation,
 - U.S. Environmental Protection Agency,
 - U.S. Food and Drug Administration, and
 - U.S. Nuclear Regulatory Commission.

Representatives of these agencies serve on the FEMA Region III Regional Assistance Committee (RAC), which is chaired by FEMA.

The Commonwealth of Pennsylvania and involved local jurisdictions have not formally submitted their RERPs to FEMA Region III for 44 CFR 350 approval.

On September 14, 1999, FEMA Region III conducted a joint REP exercise to assess the capabilities of State and local offsite emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the LGS. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA Region III RAC Chairperson and approved by the Regional Director.

Exercise reports are provided to the NRC, participating states, and FEMA Headquarters. State and local governments use the findings contained in the reports to plan, train, and improve emergency response capabilities.

The criteria used in the FEMA evaluation process are contained in the following:

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;
- FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991; and
- FEMA-REP-15, "Radiological Emergency Preparedness Exercise Evaluation Methodology," September 1991.

Section III of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section contains a description of the plume exposure pathway EPZ, a listing of all participating jurisdictions and functional entities evaluated, and a tabular presentation of the times of key exercise events and activities.

Section IV of this report, entitled "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise objectives at each jurisdiction or functional entity in a jurisdiction-based, issues-only format. This section also contains (1) descriptions of all Deficiencies and ARCAs assessed during this exercise, recommended corrective actions, and the State and local governments' response, and (2) descriptions of unresolved ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the September 14, 1999, exercise to test the offsite emergency response capabilities in the area surrounding the LGS. This section of the exercise report includes a description of the plume exposure pathway EPZ, a listing of all participating jurisdictions and functional entities evaluated, and a tabular presentation of the times of key exercise events and activities.

A. Plume Emergency Planning Zone Description

Limerick Generating Station is located in southeastern Pennsylvania on the Schuylkill River about 1.7 miles southeast of Pottstown Borough. The river passes through the site, separating the western portion, which is in East Coventry Township in Chester County, from the eastern portion, which is in Limerick and Lower Pottsgrove Townships in Montgomery County. The plant is owned and operated by PECO Energy Company. Two boiling water reactors each generate an electrical output of 1,050 megawatts (MW). Unit 1 was issued a full-power license in August 1985; commercial operations began in February 1986. Unit 2 was issued a full-power license in August 1989 with commercial operations beginning in January 1990.

The site encompasses 595 acres and is divided into three parts. The principal portion, where the major operating equipment and buildings are located, is on the east bank of the Schuylkill River. This portion is separated from the second segment, where the cooling water intake is located, near the main line of the Reading Railroad. The third portion lies on the west bank of the river, adjacent to Conrail railroad tracks. The site coordinates are approximately 40°13'27"N and 75°35'15"W.

The minimum exclusion distance for the LGS is 2,500 feet from the center of each reactor. The utility owns all the land within the exclusion area. No private residences are located within the exclusion area; however, some farming may be permitted.

There are 165 sirens installed to cover the 10-mile plume exposure pathway EPZ. These sirens are activated three minutes before the Emergency Alert System (EAS) messages issued by the risk counties are broadcast.

Soils in this area are of the Reaville-Penn-Klinesville Association and are characteristic of rolling uplands. They are underlain by sedimentary rocks of the Brunswick Formation, consisting mostly of red shale with some fine-grained sandstone interbedding.

The normal pool elevation of the Schuylkill River in this area is 200 feet above mean sea level (msl). The topography of the area is hilly, with elevations ranging from 100-300 feet above msl within 5 miles of the site. The plant is approximately 217 feet above msl.

The climate in this area is dominated by prevailing westerly winds that produce humid, continental-type weather characterized by warm summers and moderately cold winters.

Montgomery County is the warmest part of Pennsylvania; with an average annual temperature of 57°F. Annual precipitation is approximately 42 inches.

The area in the immediate vicinity of the plant is made up mostly of agricultural and other open land. The Pottstown Borough in Montgomery County is the nearest community and has a population of 22,729. The nearest major population center (more than 25,000 people) is Philadelphia, which has a population of 1,688,210 and lies 25 miles to the southeast of the site.

Two major industries employ a total of 850 persons within 2 miles of the plant. Two small airfields are also located nearby. A small private airfield is about 1 mile to the northeast, but its runway is oriented so that the flight path does not pass over the plant. The Pottstown Municipal Airport is 4.3 miles northwest of the site. The LGS does not lie in the approach pattern for this airport.

No major thoroughfares are located in the immediate vicinity of the plant. The main line of the Reading Railroad runs along the north bank of the Schuylkill River and traverses the site about 500 feet from the plant.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the LGS exercise on September 14, 1999.

COMMONWEALTH OF PENNSYLVANIA

- Pennsylvania Department of Agriculture
- Pennsylvania Department of Conservation and Natural Resources – Public Affairs
- Pennsylvania Department of Corrections
- Pennsylvania Department of Education – Curriculum and Academic Services
- Pennsylvania Department of Environmental Protection (DEP) – Bureau of Radiation Protection (BRP)
- Pennsylvania Department of Health – South Central District
- Pennsylvania Department of Revenue
- Pennsylvania Department of Transportation – Central Office
- Pennsylvania Emergency Management Agency – State Eastern Area Office
- Pennsylvania Environmental Emergency Response Operations (Hershey)
- Pennsylvania Governor's Office
- Pennsylvania Lt. Governor's Office
- Pennsylvania National Guard – 271st Air National Guard and Post Mobilization Headquarters
- Pennsylvania Public Utilities District
- Pennsylvania State Police – Bureau of Emergency and Special Operations
- Pennsylvania State Police – King of Prussia Barracks (Chester County)

Pennsylvania State Police – Limerick Station (Montgomery)
Pennsylvania State Police – Reatina Barracks (Berks County)
Pennsylvania Turnpike Authority–Communications Center
U.S. Environmental Protection Agency

RISK JURISDICTIONS

BERKS COUNTY

Berks Area/Reading Transportation Authority
Berks County Department of Public Works
Berks County Emergency Ambulance and Rescue Service
Berks County Emergency Management Agency
Berks County Fire Chiefs Association
Berks County Hazardous Materials Response Team
Berks County Planning Commission
Berks County Sheriff's Department
Exeter Township Police Department
Pennsylvania Army National Guard
Pennsylvania Department of Transportation
Pennsylvania Emergency Management Agency
Pennsylvania State Police
Pennsylvania State University – Agricultural Extension Service
U.S. Department of Agricultural (USDA) – Farm Service Agency
Wilson High School

AMITY TOWNSHIP

Amity Township Department of Public Works
Amity Township Fire Department
Amity Township Police Department
Amity Township Supervisor's Office
Monarch Fire Department

BOYERTOWN BOROUGH

Boyerton Borough Council
Boyerton Borough Manager's Office
Boyerton Borough Police Department
Boyerton Borough Fire Department
Boyerton Borough Mayor's Office
Boyerton Borough Streets Department

DOUGLASS TOWNSHIP

Douglass Township Police Department.
Douglass Township Public Works Department
Douglass Township Supervisor's Officer

CHESTER COUNTY

Chester County Bureau of Land Records
Chester County Commissioner's Office
Chester County Contracts and Purchasing
Chester County Department of Emergency Services
Chester County Department of Public Works
Chester County Emergency Services
Chester County Fire Group
Chester County Hazardous Materials Response Team #15
Chester County Health Department
Chester County Human Resources Department
Chester County Sheriff's Office
Chester County Telecommunication's Office
Chester County Water Resources Authorities
Kennett Fire Company
Lionville Fire Company
Pennsylvania Army National Guard
Pennsylvania Emergency Management Agency
Pennsylvania State Police
U.S. Department of Agriculture
West Grove Fire Company
West Town Township Emergency Management Agency
West Whiteland Fire Company #6

EAST PIKELAND TOWNSHIP

East Pikeland Township Council
East Pikeland Township Department of Public Works
East Pikeland Township Emergency Management Agency
East Pikeland Township Police Department
Kimberton Fire Company #61
Kimberton Fire Police Company #6130

EAST VINCENT TOWNSHIP

East Vincent Township Board of Supervisors and Chairman
East Vincent Township Department of Roads
East Vincent Township Police Department

NORTH COVENTRY TOWNSHIP

North Coventry (NORCO) Fire Company
North Coventry Township Board of Supervisors
North Coventry Township Emergency Management Agency
North Coventry Township Police Department

PHOENIXVILLE BOROUGH

Phoenixville Borough Fire Department
Phoenixville Borough Police Department

UWCHLAN TOWNSHIP

Lionville Fire Company
Uwchlan Ambulance Company
Uwchlan Township Board of Supervisors
Uwchlan Township Department of Roads
Uwchlan Township Manager's Office
Uwchlan Township Police Department
Uwchlan Township Transportation Department

MONTGOMERY COUNTY

Bryn Athyn Emergency Medical Services
Bryn Athyn Fire and Ambulance Company
Huntingdon Valley Fire Company and Fire Police
Lower Moreland Emergency Management Agency
Lower Moreland Township Hazardous Materials Response Team – Station 8
Lower Providence Fire Company
Montgomery County Agriculture Agency
Montgomery County Commissioner's Office
Montgomery County Emergency Dispatch Services
Montgomery County Emergency Medical Services
Montgomery County Fire Academy
Montgomery County Hazardous Materials Response Team – Stations 19 and 56
Montgomery County Lincoln Hazardous Materials Response Team
Montgomery County Office of Emergency Preparedness
Montgomery County Office of Public Safety
Montgomery County Public Works Department
Montgomery County Sheriff's Office
Pennsylvania Army National Guard
Pennsylvania Emergency Management Agency
Pennsylvania State Police

Red Hill Fire Company
Upper Moreland Emergency Management Agency
Upper Perkiomen Valley Ambulance Association
Willow Grove Fire Company
Wisahickon School District

GREEN LANE BOROUGH/MARLBOROUGH TOWNSHIP

Marlborough Township Board of Supervisor's Office
Marlborough Township Fire Department
Marlborough Township Police Department
Marlborough Township Public Works Department

LOWER FREDERICK TOWNSHIP

Lower Frederick Township Ambulance Company
Lower Frederick Township Fire Department
Lower Frederick Township Manager's Office
Lower Frederick Township Police Department
Lower Frederick Township Supervisor's Office

LOWER PROVIDENCE TOWNSHIP

Lower Providence Township Code Enforcement Department
Lower Providence Township Fire Marshal
Lower Providence Township Police Department
Lower Providence Township Public Works Department

POTTSTOWN BOROUGH

Pottstown Borough Code Enforcement Department
Pottstown Borough Emergency Medical Services
Pottstown Borough Fire Department
Pottstown Borough Manager's Office
Pottstown Borough Police Department

SCHWENKSVILLE BOROUGH

Swenksville Borough Fire Department

UPPER FREDERICK TOWNSHIP

Upper Fredrick Township Fire Company
Upper Fredrick Township Supervisor's Office

WEST POTTS GROVE TOWNSHIP

West End Fire Company
West Pottsgrove Township Police Department

SUPPORT JURISDICTIONS

**STATE EASTERN AREA EMERGENCY OPERATIONS CENTER
(HAMBURG)**

BUCKS COUNTY

Bucks County Commissioner's Office
Bucks County Communications Division
Bucks County Emergency Management Agency
Bucks County Emergency Medical Services
Bucks County Fire Marshal
Bucks County Hazardous Materials Response Team
Bucks County Sheriff's Department
Pennsylvania Emergency Management Agency

LEHIGH COUNTY

Emmaus Fire Department
Lower Milford Fire Company
Upper Saucon Ambulance Company
Upper Saucon Fire Department

SCHOOLS

BERKS COUNTY

Boyertown Area School District
Boyertown Area School District Administration
Boyertown High School

Daniel Boone Area School District
Amity Elementary Center
Monacacy Elementary School

CHESTER COUNTY

Downington Area School District

Pickering Valley Elementary School

Great Valley School District
Charlestown Elementary School

Owen J. Roberts School District

Phoenixville Area School District
Schuylkill Elementary School

MONTGOMERY COUNTY

Methacton Area School District
Eagleville Elementary School

Perkiomen Valley School District
South Elementary School

Pottsgrove School District
Pottsgrove School District Offices
Ringing Rock Elementary School

Pottstown Area School District
Edgewood Elementary School

Souderton Area School District
Salford Falls School

Spring-Ford Area School District
Limerick Elementary School

Upper Perkiomen Valley School District
Marlborough Elementary School

PRIVATE/VOLUNTEER ORGANIZATIONS

The following volunteer agencies participated in the LGS exercise at many different locations throughout the area. We thank them and all those who volunteer their services to State, county, and municipal governments during emergencies.

American Red Cross – Brandywine Branch, Southeastern Pennsylvania Chapter
Radio Amateur Civil Emergency Services (RACES)
Amateur Radio Emergency Services (ARES)
Birdsboro Volunteer Fire and Rescue
Boy Scout Troop 125
Civil Air Patrol
Custers Garage, Inc.
Gross Bus Company
Heim Security
Kennitt Fire Department
Lower Providence Ambulance Company
Monarch Volunteer Fire Department – Monocacy
Phoenixville Borough International Brothers of Electrical Workers
Phoenixville Borough Veterans Administration
Rhoads Transportation
St. Joseph Medical Center
Transportation Services, Inc.
WE (West Exeter) Laurel Amateur Radio Club
West Lawn Fire Department
West Wyomissing Fire Department
Willow Grove Volunteer Fire Department

C. Exercise Time Line

Table 1, on the following pages, presents the times at which key events and activities occurred during the LGS exercise held on September 14, 1999. Also included are times that notifications were made to the participating jurisdictions or functional entities.

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: *September 14, 1999, Limerick Generating Station*

Emergency Classification Level	Time Utility Declared	Time That Notification Was Received or Action was Taken											
		Pennsylvania State EOC	Emergency News Center	Emergency Operations Facility	Berks County EOC	Amity Township EOC	Boyertown Borough EOC	Douglass Township EOC	Chester County EOC	E. Pikeland Township EOC	E. Vincent Township EOC	N. Coventry Township EOC	Phoenixville Borough EOC
Unusual Event	1600				1606	N/A	N/A	N/A	1605				1638
Alert	1638				1623	1629	1629	1632	1635	1635	1638	1638	1650
Site Area Emergency	1811				1816	1820	1820	1822	1811	1826	1817	1830	1830
General Emergency	1919				1924	1933	1923	1936	1930	1929	1940	1941	1941
Simulated Radiation Release Started						N/A	N/A	N/A	N/A	N/A	N/A	2105	N/A
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational					1720	1725	1649	1658	1645	1651	1851	1700	1711
Declaration of State of Disaster Emergency					1904	1918	1920	1913	1918	1929	1928	1930	1920
Exercise Terminated					2120	2114	2114	2113	2130	2124	2110	2120	2103
Early Precautionary Actions:					1735	1737	1738	1740	1740	1743	1743	1743	1754
1st A&N Decision (State [made]; local [received]) Alert declared at LGS, stay tuned to radio					1735	1737	1738	1740	1740	1743	1743	1750	1754
1st Siren Activation					1740	1740	1740	1740	1740	1743	1740	1740	1740
1st EAS or EBS Message					1745	1745	1745	1745	1743	1743	1743	1743	1743
2nd A&N Decision (State [made]; local [received]) Evacuate: 360° out to 10 miles from LGS					1945	1950	1957	1952	1945	2007	1955	1957	2005
2nd Siren Activation					1955	1955	1955	1955	1958	2007	1955	1955	1955
2nd EAS or EBS Message					1958	1958	1958	1958	2000	2007	1959	1958	1958
3rd A&N Decision (State [made]; local [received]) Re-conducting of 15 minute drill					2024	2034	2038	2033					
3rd Siren Activation					2039	2039	2039	2039					
3rd EAS or EBS Message					2042	2042	2042	2042					
Precautionary Actions: Shelter animals and place on stored food and covered water					1924				1743	1740	1740	1944	1754
KI Administration Decision: Emergency Workers Advised <u>not</u> to Take					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KI Administration Decision: Emergency Workers Advised <u>to</u> Take						N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LEGEND: S - Support Jurisdiction

D - Decision Making Jurisdiction

A - Activating Jurisdiction

N/A - Not Applicable

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: *September 14, 1999, Limerick Generating Station*

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken								
		Uwchlan Township EOC	Montgomery County EOC	Green Lane Borough/ Marlborough Twp. EOC	Lower Frederick Township EOC	Lower Providence Township EOC	Pottstown Borough EOC	Schwenksville Borough EOC	Upper Frederick Township EOC	W. Pottsgrove Township EOC
Unusual Event	1600		1610							
Alert	1638	1642	1639	1639	1639	1619	1651	1639	1630	1646
Site Area Emergency	1811	1824	1819	1825	1824	1824	1835	1824	1823	1823
General Emergency	1919	1928	1929	1931	1930	1935	1935	1929	1931	1931
Simulated Radiation Release Started										
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1645	1652	1700	1720	1715	1713	1705	1708	1720
Declaration of State of Disaster Emergency		1925	1917							
Exercise Terminated		2110	2122	2120	2120	2122	2129	2104	2100	2124
Early Precautionary Actions:		1745	1937				1835			
1st A&N Decision (State [made]; local [received]) Alert declared at LGS, stay tuned to radio		1748	1730	2038		1958	2003	2035		1646
1st Siren Activation		1740	1740	2039		2039	2005	2039	2039	2035
1st EAS or EBS Message		1743	1743				2040			
2nd A&N Decision (State [made]; local [received]) Evacuate: 360° out to 10 miles from LGS		1958	1945	2003				2000	1957	2002
2nd Siren Activation		1955	1955	1957						
2nd EAS or EBS Message		1958	1958							
3rd A&N Decision (State [made]; local [received]) Re-conducting of 15 minute drill			2024							
3rd Siren Activation			2039							
3rd EAS or EBS Message			2042							
Precautionary Actions: Shelter animals and place on stored food and covered water		1909								
KI Administration Decision: Emergency Workers Advised <u>not</u> to Take [From Co. RO]		N/A		2100	2100	2103	2103	2053	2056	2055
KI Administration Decision: Emergency Workers Advised <u>to</u> Take		N/A								

LEGEND: S - Support Jurisdiction

D - Decision Making Jurisdiction

A - Activating Jurisdiction

N/A - Not Applicable

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: September 14, 1999, Limerick Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken										
		Bucks County EOC	Lehigh County EOC	State Area EOC (Hamburg)								
Unusual Event	1600											
Alert	1638	1634	1636	1632								
Site Area Emergency	1811	1827	1822	1824								
General Emergency	1919	2012	2015	2005								
Simulated Radiation Release Started		2103	2057	2051								
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A								
Facility Declared Operational		1700	1655	1632								
Declaration of State of Disaster Emergency		1906	1927	1930								
Exercise Terminated		2123	2113	2123								
Early Precautionary Actions:		1908		1900								
1st A&N Decision (State [made]; local [received]) Alert declared at LGS, stay tuned to radio		1747										
1st Siren Activation		N/A										
1st EAS or EBS Message		N/A										
2nd A&N Decision (State [made]; local [received]) Evacuate: 360° out to 10 miles from LGS		2012										
2nd Siren Activation		N/A										
2nd EAS or EBS Message		N/A										
3rd A&N Decision (State [made]; local [received]) Re-conducting of 15 minute drill												
3rd Siren Activation												
3rd EAS or EBS Message												
Precautionary Actions: Shelter animals and place on stored food and covered water		N/A										
KI Administration Decision: Emergency Workers Advised <u>not</u> to Take		N/A										
KI Administration Decision: Emergency Workers Advised <u>to</u> Take		2103										

LEGEND: S - Support Jurisdiction

D - Decision Making Jurisdiction

A - Activating Jurisdiction

N/A - Not Applicable

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: *September 14, 1999, Limerick Generating Station*

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken										
		Bucks County EOC	Lehigh County EOC	State Area EOC (Hamburg)								
Unusual Event	1600											
Alert	1638	1634	1636	1632								
Site Area Emergency	1811	1827	1822	1824								
General Emergency	1919	2012	2015	2005								
Simulated Radiation Release Started		2103	2057	2051								
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A								
Facility Declared Operational		1700	1655	1632								
Declaration of State of Disaster Emergency		1906	1927	1930								
Exercise Terminated		2123	2113	2123								
Early Precautionary Actions:		1908		1900								
1st A&N Decision (State [made]; local [received]) Alert declared at LGS, stay tuned to radio		1747										
1st Siren Activation		N/A										
1st EAS or EBS Message		N/A										
2nd A&N Decision (State [made]; local [received]) Evacuate: 360° out to 10 miles from LGS		2012										
2nd Siren Activation		N/A										
2nd EAS or EBS Message		N/A										
3rd A&N Decision (State [made]; local [received]) Re-conducting of 15 minute drill												
3rd Siren Activation												
3rd EAS or EBS Message												
Precautionary Actions: Shelter animals and place on stored food and covered water		N/A										
KI Administration Decision: Emergency Workers Advised <u>not</u> to Take		N/A										
KI Administration Decision: Emergency Workers Advised <u>to</u> Take		2103										

LEGEND: S - Support Jurisdiction

D - Decision Making Jurisdiction

A - Activating Jurisdiction

N/A - Not Applicable

IV. EXERCISE EVALUATION AND RESULTS

This section contains the results and findings of the evaluation of all jurisdictions and locations that participated in the September 14, 1999, exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the LGS.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria contained in exercise objectives in FEMA-REP-14, *REP Exercise Manual*, September 1991. Detailed information on the exercise objectives and the extent-of-play agreement used in this exercise are found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation

The matrix presented in Table 2, on the following pages, presents the status of all exercise objectives from FEMA-REP-14 scheduled for demonstration during this exercise at all participating jurisdictions and functional entities. Exercise objectives are listed by number, and the demonstration status is indicated by the use of the following letters:

- M – Met (No Deficiency or ARCAs assessed)
- D – Deficiency(ies) assessed
- A – ARCA(s) assessed (not affecting health and safety of public)
- N – Not demonstrated (reason explained in Section IV.B.)
- U – Unresolved ARCA(s) from prior exercise(s)
- S – Self-corrected Deficiency assessed, subsequent activities were met
- ¹ – State and/or county sole responsibility
- Blank – Not scheduled for demonstration

TABLE 2. SUMMARY RESULTS OF 1999 PLUME EXERCISE EVALUATION

DATE AND SITE: September 14 and December 7, 1999, Limerick Generating Station

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
COMMONWEALTH OF PENNSYLVANIA																																		
STATE EMERGENCY OPERATIONS CENTER					A					M				D				A					A								A			
PUBLIC INFORMATION ACTIVITIES (CENIC)											M	M	M																					
EMERGENCY NEWS CENTER (Utility)		M		M								M																						
ACCIDENT ASSESSMENT (State EOC-BRP)																																		
EMERGENCY OPERATIONS FACILITY (BRP-PA)				M																														
STATE FIELD MONITORING TEAM A				M	M	M		M						M																				
STATE FIELD MONITORING TEAM B				M	M	M		M						M																				
STATE DEP/BRP LABORATORY																																		
STATE FIELD SAMPLING TEAM (Water)																																		
STATE FIELD SAMPLING TEAM B (Agriculture)																																		
STATE TRAFFIC/ACCESS CONTROL POINTS (State Police-Risk Counties)					M	M								M				M																
STATE AREA EOC (Eastern-Hamburg '95 & '99)	M	M	M	M																														
RISK JURISDICTIONS																																		
BERKS COUNTY																																		
EMERGENCY OPERATIONS CENTER	M	M	A	M	M					M	M	M	M	M	M	M	M																	
EMERGENCY ALERTING SYSTEM STATION																																		
RECEPTION CENTER (Robeson Township Municipal Building '95)																																		
RECEPTION CENTER (Oley Valley High School '97)																																		
RECEPTION CENTER (Pathmark Plaza)																																		
RECEPTION CENTER (Boscov's Outlet '99)					M																													
RECEPTION CENTER (Morgantown Industrial Park)																																		
MON./DECON./MASS CARE CENTER (Antietam Jr./Sr. H.S.)																																		
MON./DECON./MASS CARE CENTER (Schuylkill Valley H.S. '97)																																		
MON./DECON./MASS CARE CENTER (Wilson H.S. '99)					M																													
MON./DECON./MASS CARE CENTER (Muhlenberg Complex)																																		
MON./DECON./MASS CARE CENTER (Gov. Mifflin Sr. H.S. '95)																																		
MON./DECON. STATION (Daniel Boone Jr./Sr. High School '97 & '99)					M																													
AMITY TOWNSHIP EOC '99	M	M	M	M	M						M				M	M		M																

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)

A = ARCA(s) assessed (Not affecting health and safety of public)

Blank = Not scheduled for demonstration

D = Deficiency assessed

U = Unresolved ARCA(s) from prior exercises

N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

TABLE 2. SUMMARY RESULTS OF 1999 PLUME EMERGENCY EVALUATION

DATE AND SITE: September 14 and December 7, 1999, Limerick Generating Station

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33			
BERKS COUNTY (Cont'd)																																				
BOYERTOWN BOROUGH EOC '99	M	M	M	M	M					M				M	M		M																			
COLEBROOK TOWNSHIP EOC '97																																				
DOUGLASS TOWNSHIP EOC (Route Alerting '99)	M	M	M	M	A					M				M	M		M																			
EARL TOWNSHIP EOC '97																		1																		
UNION TOWNSHIP EOC '97																		1																		
WASHINGTON TOWNSHIP EOC '97																		1																		
CHESTER COUNTY																																				
EMERGENCY OPERATIONS CENTER	M	M	M	M	M					M	D	D	A	M	M	M	M																			
EMERGENCY ALERTING SYSTEM STATION																																				
SPECIAL POPULATIONS FACILITY																																				
RECEPTION CENTER (Stetson Middle School '95 & '99)					M														A																	
RECEPTION CENTER (Downingtown Sr. High School '97)																																				
RECEPTION CENTER (West Whiteland Township Building)																																				
MON./DECON./MASS CARE CENTER (Fred Engle Middle School '95 & '99)					M														A	A																
MON./DECON./MASS CARE CENTER (Gordon Middle School '97)																																				
MON./DECON./MASS CARE CENTER (Avon Grove High School)																																				
MON./DECON./MASS CARE CENTER (Mary Lang Elementary)																																				
MON./DECON./MASS CARE CENTER (North/South Brandywine)																																				
MON./DECON. STATION (Lionville Middle School '95 & '99)					M																							A								
MON./DECON. STATION (Valley Forge Intermediate School '97)																																				
CHARLESTOWN TOWNSHIP EOC '97																																				
EAST COVENTRY TOWNSHIP EOC '97																																				
EAST NANTMEAL TOWNSHIP EOC '97																																				
EAST PIKELAND TOWNSHIP EOC '99	M	M	M	M	A					M					M	M		M																		
EAST VINCENT TOWNSHIP EOC '99	M	M	M	M	M					M					A	M		M																		
NORTH COVENTRY TOWNSHIP EOC '99	M	M	M	M	M					M					M	M		M																		

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
 D = Deficiency assessed
 1 = State and/or county sole responsibility

A = ARCA(s) assessed (Not affecting health and safety of public)
 U = Unresolved ARCA(s) from prior exercises

Blank = Not scheduled for demonstration
 N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

TABLE 2. SUMMARY RESULTS OF 1999 PLUME EXERCISE EVALUATION

DATE AND SITE: *September 14 and December 7, 1999, Limerick Generating Station*

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33		
CHESTER COUNTY (Cont'd)																																			
PHOENIMVILLE BOROUGH EOC (Route Alerting '99)	M	M	M	M	M					M				M	M		M																		
SCHUYLKILL TOWNSHIP EOC '97																																			
SOUTH COVENTRY TOWNSHIP EOC '97																																			
SPRING CITY BOROUGH EOC '97					U																														
UPPER UWCHLAN TOWNSHIP EOC '97																																			
UWCHLAN TOWNSHIP EOC '99	M	M	M	M	M					M				M	M		M														M				
WARWICK TOWNSHIP EOC '97																																			
WEST PIKELAND TOWNSHIP/WEST VINCENT TOWNSHIP EOC '97																																			
MONTGOMERY COUNTY																																			
EMERGENCY OPERATIONS CENTER	M	M	D	M	D					M	S	D	D	M	M	M	M																M		
EMERGENCY ALERTING SYSTEM STATION																																			
SPECIAL POPULATIONS FACILITY																																			
RECEPTION CENTER (Willow Grove Industrial Park '95 & '99)					M																														
RECEPTION CENTER (Montgomery Mall '97)																																			
MON./DECON./MASS CARE CENTER (Upper Moreland Middle School '95)																																			
MON./DECON./MASS CARE CENTER (Lower Moreland H.S. '99)					M																														
MON./DECON./MASS CARE CENTER (Upper Dublin Sr. H.S.)																																			
MON./DECON./MASS CARE CENTER (Hatboro-Horsham Sr. H.S.)																																			
MON./DECON./MASS CARE CENTER (Springfield Township Sr. H.S.)																																			
MON./DECON./MASS CARE CENTER (Sandy Run Middle School '97)																																			
MON./DECON. STATION (Methacton Sr. High School '95)																																			
MON./DECON. STATION (Indian Valley Middle School '97)																																			
MON./DECON. STATION (Upper Perkiomen H.S. '99)					M																														
COLLEGEVILLE BOROUGH EOC '97																																			
DOUGLAS TOWNSHIP EOC '99																																			
GREEN LANE BOROUGH/MARLBOROUGH TOWNSHIP EOC '99	M	U	M	M	M					M				M	M		M																	U	

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
 D = Deficiency assessed
 1 = State and/or county sole responsibility

A = ARCA(s) assessed (Not affecting health and safety of public)
 U = Unresolved ARCA(s) from prior exercises
 S = Self-corrected Deficiency assessed, subsequent activities were met

Blank = Not scheduled for demonstration
 N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

TABLE 2. SUMMARY RESULTS OF 1999 PLUME EMERGENCY EVALUATION

DATE AND SITE: *September 14 and December 7, 1999, Limerick Generating Station*

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33		
MONTGOMERY COUNTY (Cont'd)																																			
LIMERICK TOWNSHIP EOC '97																																			
LOWER FREDERICK TOWNSHIP EOC '99	A	M	M	M	M					M				M	A		A															U			
LOWER POTTSBORO TOWNSHIP EOC '97																																			
LOWER PROVIDENCE TOWNSHIP EOC '97 (Route Alerting '99)	M	M	M	M	A					M				M	M		M																		
LOWER SALFORD TOWNSHIP EOC '97																																			
NEW HANOVER TOWNSHIP EOC '97																																			
PERKIOMEN TOWNSHIP EOC '97																																			
POTTSTOWN BOROUGH EOC '99	M	M	M	M	M					M				M	M		M																		
ROYERSFORD BOROUGH EOC '97																																			
SCHWENKSVILLE BOROUGH EOC '99	M	M	M	M	M					M				M	M		M															M			
SKIPPAK TOWNSHIP EOC '97																																			
TRAPPE BOROUGH EOC '97																																			
UPPER FREDERICK TOWNSHIP EOC '99	M	M	M	M	M					M				M	M		M																		
UPPER POTTSBORO TOWNSHIP EOC '97																																			
UPPER PROVIDENCE TOWNSHIP EOC '97																																			
UPPER SALFORD TOWNSHIP EOC '97																																			
WEST POTTSBORO TOWNSHIP EOC '99	M	M	M	M	M					M				M	M		M																U		
SUPPORT JURISDICTIONS																																			
BUCKS COUNTY																																			
EMERGENCY OPERATIONS CENTER	M	M	M	M									M	M																					
RECEPTION CENTER (Neshaminy Mall '95 & '99)					A																														
RECEPTION CENTER (County Line Plaza)																																			
MON./DECON./MASS CARE CENTER (Neshaminy High School '95)																																			
MON./DECON./MASS CARE CENTER (Central Bucks West H.S. '97)																																			
MON./DECON./MASS CARE CENTER (Central Bucks East H.S.)																																			
MON./DECON./MASS CARE CENTER (Armstrong Middle School '99)					M																														
MON./DECON./MASS CARE CENTER (William Tennyson Complex)																																			

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
 D = Deficiency assessed
 † = State and/or county sole responsibility

A = ARCA(s) assessed (Not affecting health and safety of public)
 U = Unresolved ARCA(s) from prior exercises

Blank = Not scheduled for demonstration
 N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

TABLE 2. SUMMARY RESULTS OF 1999 PLUME EMERCISE EVALUATION

DATE AND SITE: *September 14 and December 7, 1999, Limerick Generating Station*

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33			
BUCKS COUNTY (Cont'd)																																				
MON./DECON./MASS CARE CENTER (Council Rock Sr. H.S.)																																				
MON./DECON./MASS CARE CENTER (Morrisville H.S.)																																				
MON./DECON./MASS CARE CENTER (Lenape Jr. High School)																																				
MON./DECON./MASS CARE CENTER (Neshaminy Middle School)																																				
LEHIGH COUNTY																																				
EMERGENCY OPERATIONS CENTER	M	M	M	M								U	M																							
RECEPTION CENTER (Pitt-Ohio Express Terminal '95 & '99)					M															M																
RECEPTION CENTER (Emmaus High School '97)																																				
MON./DECON./MASS CARE CENTER (Allentown College '95 & '99)					M															A	M															
MON./DECON./MASS CARE CENTER (Emmaus High School '97)																																				
MON./DECON./MASS CARE CENTER (South Mountain Middle School)																																				
MON./DECON./MASS CARE CENTER (Salisbury High School)																																				
MON./DECON./MASS CARE CENTER (Northwestern Lehigh H.S.)																																				
MON./DECON./MASS CARE CENTER (Northern Lehigh Sr. H.S.)																																				
MON./DECON./MASS CARE CENTER (Northern Lehigh Jr. H.S.)																																				
SCHOOL DISTRICTS																																				
BERKS COUNTY																																				
BOYERTON AREA (Gilbertsville Elementary '97)																																				
BOYERTON AREA (Boyerton Area High School '99)																	M																			
DANIEL BOONE AREA (Monacacy Elementary '97)																																				
DANIEL BOONE AREA (Amity Elementary Center '99)																	M																			
CHESTER COUNTY																																				
DOWNINGTON AREA (Pickering Valley Elementary '97 & '99)																	M																			

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
D = Deficiency assessed

A = ARCA(s) assessed (Not affecting health and safety of public)
U = Unresolved ARCA(s) from prior exercises

Blank = Not scheduled for demonstration
N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

B. Status of Jurisdictions Evaluated

This subsection provides information on the evaluation of each participating jurisdiction and functional entity in a jurisdiction-based, issues-only format. Presented below are definitions of the terms used in this subsection that are relevant to demonstrating the status of an objective.

- **Met** – Listing of the demonstrated exercise objectives under which no Deficiencies or ARCAs were assessed during this exercise, and under which no ARCAs assessed during previous exercises remain unresolved.
- **Deficiency** – Listing of the demonstrated exercise objectives under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Area Requiring Corrective Actions** – Listing of the demonstrated exercise objectives under which one or more ARCAs were assessed during the current exercise or under which ARCAs assessed during previous exercises remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.
- **Not Demonstrated** – Listing of the exercise objectives that were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.
- **Prior Issues – Resolved** – Descriptions of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.
- **Prior Issues – Unresolved** – Descriptions of ARCAs assessed during previous exercises that were not resolved in this exercise. Included are the reasons the ARCAs remain unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

The following are definitions of the two types of exercise issues discussed in this report.

- A **Deficiency** is defined in FEMA-REP-14 as "... an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

- An **ARCA** is defined in FEMA-REP-14 as "... an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

FEMA has developed a standardized system for numbering exercise issues (Deficiencies and ARCAs). This system is used to achieve consistency in numbering exercise issues among FEMA Regions and site-specific exercise reports within each Region. It is also used to expedite tracking of exercise issues on a nationwide basis.

The identifying numbers for Deficiencies and ARCAs include the following elements, each separated by a hyphen:

- **Plant Site Identifier** – A two-digit number corresponding to the Utility Billable Plant Site Codes.
- **Exercise Year** – The last two digits of the year the exercise was conducted.
- **Objective Number** – A two-digit number corresponding to the objective number in FEMA-REP-14.
- **Issue Classification Identifier** – (D = Deficiency, A = ARCA) Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise Identification Number** – A two- or three-digit indexing number assigned to each issue identified in the exercise.

1. COMMONWEALTH OF PENNSYLVANIA

1.1 EMERGENCY OPERATIONS CENTER/COMMONWEALTH EMERGENCY NEWS INFORMATION CENTER

- a. **MET:** Objectives 10, 11, 12, and 13
- b. **DEFICIENCY:** Objective 14

Issue No.: 35-99-14-D-01

Description: A message to take potassium iodide (KI) was not received in Chester, Berks, and Montgomery counties. The Secretary of Health made the decision around 1940 for emergency workers to take KI in response to a dose projection in excess of 25 rem to an individual's thyroid. The message was sent at 1942 and received by Pennsylvania State Police (PSP) personnel at the access control points/traffic control points (ACP/TCP) and at Bucks County Emergency Operations Center (EOC). Pennsylvania Emergency Management Agency (PEMA) staff at the State EOC failed to send this message to the risk counties because of a breakdown in communications. (NUREG-0654, J.10.e. and J.10.f.)

Recommendation: FEMA Region III requires that the following actions be taken to address the Deficiency:

- State EOC staff will attend training and participate in a practice exercise.
- State EOC staff, necessary risk county EOC staff, and 1/3 of the local EOCs staffed by, at minimum, an Emergency Management Coordinator (EMC) or designated replacement and one offsite emergency worker per EOC must participate in a remedial exercise to address the concerns identified in the Deficiency within 120 days of the exercise date.

In addition, personnel in the State EOC will develop a verification process to ensure that all outgoing messages are received by the appropriate counties and agencies, especially messages that are necessary for the protection of the public and emergency workers.

Remedial Action Demonstrated: During the remedial exercise, conducted on December 7, 1999, the Commonwealth of Pennsylvania successfully transmitted the order for emergency workers to ingest KI to the risk counties. At 1205, the Secretary of Health made the decision for emergency workers to ingest KI based on plant conditions. The decision was then given to the State EOC Duty Officer, who in turn passed the information to the risk and support counties. The Duty Officer verified the receipt of the KI order at 1210.

Schedule of Corrective Actions: The Deficiency will be addressed during the scheduled Remedial Exercise in December 1999.

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 5, 18, 22, and 30.

Issue No.: 35-99-05-A-01

Description: During the remedial exercise on December 7, 1999, the Commonwealth of Pennsylvania failed to ensure that the emergency workers' dosimeters in Chester and Montgomery Counties had been tested for electrical leakage. This testing is required by Guidance Memorandum PR-1, dated October 1, 1985, *Policy on NUREG-0654/FEMA-REP-1 and 44 CFR 350 Periodic Requirements*; Section C (page 8), *Annual Letter of Certification*; subparagraph 2, *Emergency Facilities and Equipment (H)*; and FEMA-REP-14, September 1991, page D.5.6. (NUREG-0654, H.10. and K.3.a.)

Recommendation: The DRDs must be tested for electrical leakage at the proper intervals in accordance with FEMA-REP-14, page D-5-6. During electrical leakage testing, DRDs should be zeroed and then reread in 48 hours (by whatever agency performs the leakage testing) to determine whether drifting has occurred. Those DRDs drifting more than 20% should be zeroed and rechecked after another 48 hours; if they continue to have excessive drifting, they should be replaced. Documentation of proper electrical leakage testing of the DRDs should be made available for inspection during the next exercise.

Schedule of Corrective Actions: None.

Issue No.: 35-99-18/22-A-02

Description: The State and/or Utility did not provide controllers for injecting messages concerning radioactive contamination levels for monitoring and decontamination activities at all risk and support county monitoring/decontamination centers and stations. (NUREG-0654, J.12. and K.5.b.)

Recommendation: Controllers and appropriate inject messages should be provided during the next exercise.

Schedule of Correction Actions: It is not the responsibility of the Commonwealth or the Utility to provide controllers. This requirement was never discussed in the extent of play meetings. Neither the Commonwealth nor the Utility was required to perform this task in prior full scale exercises conducted in the Commonwealth. The Director, PEMA, responded to your undated faxed letter asking to provide controllers for player information on September 10, 1999. In his response to the RAC Chair, the Director explained why it was not possible to provide controllers. The Commonwealth has yet to receive a reply to our response.

Furthermore NUREG-0654, J.12 states “Each organization shall describe the means for registering and monitoring of evacuees at relocation centers in host areas. The personnel and equipment available should be capable of monitoring within about a 12 hour period all residents and transients in the plume exposure EPZ arriving at relocation centers” and K.5.b states “Each organization, as appropriate, shall establish the means for radiological decontamination of emergency personnel wounds, supplies, instruments and equipment, and for waste disposal.” There is no mention of State or Licensee providing controllers for injecting messages.

FEMA Response: The fundamental REP exercise principle of clearly defined roles and responsibilities for players, evaluators, and controllers was ignored. This standard, Federal evaluators do not function as controllers in any capacity during an exercise, had been repeatedly emphasized by the RAC Chairman. The RAC Chairman and the FEMA Project Officer – from the onset of negotiations with the Commonwealth of Pennsylvania and PECO Energy – advised that Federal evaluators were not going to be permitted to serve the dual role of evaluator/controller. The role of Federal evaluators during an exercise is extensive; evaluators must make numerous observations about a variety of events that often occur simultaneously and document those observations in great detail.

Issue No.: 35-99-30-A-03

Description: The extent-of-play agreement required that liaisons from the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Army National Guard (PAANG) demonstrate a shift change during the exercise at the Montgomery County and Chester County EOCs. No liaison from PennDOT was present at the Chester County EOC, and no PennDOT and PAANG personnel reported to the Montgomery County EOC during the exercise. (NUREG-0654, A.4.)

Recommendation: PennDOT and PAANG should provide liaisons for both shifts to the Montgomery and Chester County EOCs during the next exercise.

Schedule of Corrective Actions: PennDOT and PAANG will provide liaisons for both shifts to the Montgomery and Chester County EOCs during next scheduled Biennial Exercise.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

1.2 EMERGENCY NEWS CENTER

- a. **MET:** Objectives 2, 4, and 12
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

1.3 EMERGENCY OPERATIONS FACILITY (BRP)

- a. **MET:** Objective 4
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

1.4 FIELD MONITORING TEAM A

- a. **MET:** Objectives 4, 5, 6, 8, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objectives 4, 5, and 6

Issue No.: 35-97-04-A-01

Description: From 1930 until 2130, the Field Team Coordinator (FTC) did not communicate updates on plant status, radiological release information, or changes in meteorological conditions to field monitoring teams (FMT). Several times

during the exercise, the FMTs requested this information and did not receive an appropriate response. (NUREG-0654, F.1., F.2., and N.1.a.)

Corrective Action Demonstrated: During the exercise, the FTC provided updates on plant status, significant radioactive releases, and changes in meteorological conditions to the FMTs. When the FMTs requested information, they received an appropriate response.

Issue No.: 35-97-05-A-02

Description: One team member was not aware of the 5 rem limit for normal emergency activity, 10 rem limit to protect valuable property, 25 rem limit for life saving, and greater than 25 rem limit on a voluntary basis to protect a significant percentage of the population. These limits are specified in procedure DEP/BRP/IP-101, pages 4 and 5, Rev. 4, August 1996. (NUREG K.3.b., K.4.)

Corrective Action Demonstrated: During the exercise, the FMT members were aware of the 5-rem total effective dose estimate (TEDE) for normal emergency activity, 10-rem TEDE to protect valuable property, 25-rem TEDE for life saving, and greater-than-25-rem TEDE (voluntary) to protect a significant percentage of the population.

Issue No.: 35-97-06-A-03

Description: The plastic cover of the low-range probe used for ambient radiation measurements by FMT A was ripped during the initial measurement sequence. All three members of the team used the instrument without noticing the hole. The plastic cover is necessary to maintain contamination control in accordance with procedure DEP/BRP/IP-102, page 5, Rev. 8, August 1996. (NUREG-0654, I.7., I.8., I.11.).

Corrective Action Demonstrated: During this exercise, the low-range probe used for ambient radiation measurements was covered by an intact plastic cover.

f. **PRIOR ISSUES – UNRESOLVED:** None

1.5 **FIELD MONITORING TEAM B**

a. **MET:** Objectives 4, 5, 6, 8, and 14

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** None

d. **NOT DEMONSTRATED:** None

- e. **PRIOR ISSUES – RESOLVED:** Objective 4

Issue No.: 35-97-04-A-04

Description: From 1930 until 2130, the FTC did not communicate updates on plant status, radiological release information, or changes in meteorological conditions to FMTs. Several times during the exercise, the FMTs requested this information and did not receive an appropriate response. (NUREG-0654, F.1., F.2., and N.1.a.)

Corrective Action Demonstrated: Members of FMT B and the FTC at the State EOC in Harrisburg maintained adequate radio contact throughout the exercise, and were able to communicate all necessary information and respond without difficulty.

- f. **PRIOR ISSUES – UNRESOLVED:** None

1.6 STATE TRAFFIC/ACCESS CONTROL (PSP)

- a. **MET:** Objectives 4, 5, 14, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 5

Issue No.: 35-97-05-A-05

Description: The supervisor was not aware of the decision chain for an emergency worker exposure described on page E-5-35 of the State plan. In the live briefing provided to the PSP officers, the supervisor stated that if the officers received a 5 rem or more exposure within a half-hour period, they were to call the dispatch officer. However, no instructions were given to call the dispatch officer when an accumulated total of 5 rem was received. Several troopers stated they only need to call the dispatch officer when they receive a 5 rem exposure in a half-hour period. (NUREG-0654, K.3.b., K.4.)

Corrective Action Demonstrated: The PSP Staging Area Coordinator presented a clear, complete, and concise briefing to the TCP/ACP personnel. This briefing provided accurate information on the need for personnel to read their direct reading dosimeters (DRD) at 30-minute intervals and to report to the Staging

Coordinator if and when exposure reached 5 rem. These instructions are now included on the reverse side of the Dosimetry/KI Report Form.

f. **PRIOR ISSUES – UNRESOLVED:** None

2. RISK JURISDICTIONS

2.1 BERKS COUNTY

2.1.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 4, 5, 9, 10 11, 12, 13, 14, 15, and 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 3

Issue No.: 35-99-03-A-04

Description: The vehicle used by the hearing-impaired notification team in Douglass Township was not equipped with a two-way radio or other means of communication with appropriate emergency personnel. (NUREG-0654, A.2.a. and J.10.d.)

Recommendation: The vehicle used for notification of hearing-impaired individuals should have appropriate communication capability.

Schedule of Corrective Actions: The Extent of Play states that the Notification of the hearing impaired will be accomplished by a team which has been briefed on the location(s) of the hearing impaired within a selected municipality (one municipality per risk county). The evaluator will accompany the team to the residence of each hearing impaired person or persons. *“No contact will be made with the hearing impaired.”* The Extent of Play did not require a specific type of vehicle nor the need for communication between the said vehicle and the emergency operations center as this demonstration was an out of sequence event.

NUREG 0654, E.6 states, “Each organization shall establish administrative and physical means, and time required for notifying and providing prompt instructions to the public within the plume exposure pathway Emergency Planning Zone.” Nothing within the cited paragraph of NUREG 0654 establishes or requires communications between the hearing notification team and the Emergency Operations Center for this out of sequence demonstration.

This was an exercise artificiality. Hearing impaired notification is done by police, fire, EMS or public works vehicles, only if, the hearing impaired individual can

not be contacted by telephone. All these vehicles are equipped with radios. Douglass Township had no access to these vehicles for the exercise. Because FEMA wanted to see this demonstrated during the exercises the municipality used available resources. As mentioned earlier, in the agreed Extent of Play, there is no requirement for the vehicle to have two-way communications. The municipality demonstrated hearing impaired notification as agreed upon. In the event of a real emergency, the municipalities in Berks County will notify the hearing impaired residents in accordance with their plans.

FEMA Response: FEMA-REP-14 (September 1991), *Regulatory Basis for FEMA's REP Exercise Program*, Section B, pages B.1 through B.3, provides a synopsis of the development and transition of the requirements of Public Law 96-295 through 10 CFR Part 50, Appendix E, 44 CFR Part 350, and NUREG-0654 to FEMA-REP-14 and -15. FEMA-REP-14 and 15 provide the latest acceptable national standards for exercise evaluations. Both the planning standards (NUREG-0654) and evaluation criteria (FEMA-REP-14 and -15) are used by FEMA, the NRC, and other involved Federal agencies to evaluate ORO planning and preparedness in REP exercises. "These standards and criteria support the basic criterion for addressing the adequacy of emergency preparedness, that is: emergency plans and preparedness are '...adequate to protect the health and safety of the public living in the vicinity of the nuclear power facility by providing reasonable assurance that appropriate protective measures can be taken offsite in the event of a radiological emergency...' [44 CFR 350.12(b)(1)]."

FEMA-REP-14, Objective 4: *Communications*, pages D.4-2 through D.4-3 states, "...demonstration of this objective covers the availability and operability of communication systems and procedures for use between ORO facilities and field units." On page D.4-3, a facility is described as "any building, center, room(s), or mobile unit(s) designed and equipped to support emergency operations..."

The issue was assigned to Objective 3: *Direction and Control* because the municipality EOC coordinator was not able to issue instructions to the staff in the route alerting vehicle. Once the ORO realized that the emergency vehicle was not equipped with communications and no other emergency vehicle was available for use, the ORO should have sent a message indicating an unmet need to the County asking for support. In addition, because no radio was available, the municipality had no way of managing emergency worker exposure control or providing other important information.

Finally, FEMA-REP-14 states: "Extent-of-play agreements should be documented for all OROs seeking to simulate demonstration of specific objectives (certain conditions implied), under the guidance contained in Section D of this Manual." The extent-of-play agreement serves to clarify certain specific idiosyncrasies of the community and not as the extent of evaluation. Section D of FEMA-REP-14

was developed for evaluating a jurisdiction, and is the accepted national standard for the "Interpretation of REP Exercise Objectives."

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objectives 5 and 12

Issue No.: 35-97-05-A-06

Description: The Dosimetry/KI Report Form used for demonstration by the Berks County EMA Radiological Officer (RO) is not the form specified in the county RERP (Appendix 13, Attachment C) but rather a form used by PEMA Bureau of Plans and Preparedness, Radiological Planning Division (PEMA-RPD-BPP 3 [revised September 1996]). While the two forms have similar content, dose limit instructions on the PEMA form conflict with instructions in the Berks County RERP. (NUREG-0654, K.3.a., K.3.b., and K.4.)

Corrective Action Demonstrated: The Dosimetry/KI Report Form has been removed from the county RERP. Copies of the current form are available in the Berks County EOC and the form is referenced in the revised county RERP (Rev. 6, June 1999).

Issue No.: 35-97-12-A-07

Description: The Berks County Public Information Officer (PIO) failed to coordinate with other risk county PIOs prior to the release of official information to the media, as required by the Berks County RERP and the exercise extent-of-play agreement. The Berks County plan (Appendix 4, paragraph 3.K., page E-4-3, RERP, Rev. 4, dated April 1996) states that "The County has appointed PIOs to serve as the county's spokespersons at the Media Center in the event of an emergency. The PIO will coordinate with other risk county PIOs and the PEMA Press Secretary prior to releasing any official information." (NUREG-0654, E.5., E.7., and G.4.a.)

Corrective Action Demonstrated: The Berks County PIO conferred with the PIOs of other risk counties and the PEMA Press Secretary prior to release of any official information (county press releases and EAS messages).

- f. **PRIOR ISSUES – UNRESOLVED:** None

2.1.2 **EMERGENCY WORKER MONITORING/DECONTAMINATION STATION (Daniel Boone Jr./Sr. High School)**

- a. **MET:** Objective 5

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 22

Issue No.: 35-99-22-A-05

Description: The radiation monitors did not survey the bottoms of the workers' shoes or the thyroid of any of the workers. (NUREG-0654, K.5.b.)

Recommendation: The radiation monitors should receive additional training in proper monitoring techniques.

Schedule of Corrective Actions: The radiation monitor will receive additional training in proper monitoring techniques.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES – RESOLVED:** None

f. **PRIOR ISSUES – UNRESOLVED:** None

2.1.3 **RECEPTION CENTER (Boscov's Outlet)**

a. **MET:** Objectives 5 and 18

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** None

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES – RESOLVED:** None

f. **PRIOR ISSUES – UNRESOLVED:** None

2.1.4 **MONITORING/DECONTAMINATION/MASS CARE CENTER (Wilson High School)**

a. **MET:** Objectives 5, 18, and 19

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** None

d. **NOT DEMONSTRATED:** None

- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.1.5 AMITY TOWNSHIP EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.1.6 BOYERTOWN BOROUGH EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 15

Issue No.: 35-97-15-A-08

Description: At the Alert Emergency Classification Level (ECL), the EMC did not alert or notify hearing-impaired borough residents, as required by the Boyertown Borough Emergency Plan (page 22, paragraph 2.d. and Attachment F, page F-1) and did not assign this duty to another person. He did not believe this was a borough requirement. (NUREG-0654, J.10.d. and J.10.g.)

Corrective Action Demonstrated: In accordance with the Boyertown plan, hearing-impaired individuals were notified by the Boyertown Fire Department at the instruction of the Boyertown EOC Coordinator. The notifications occurred during the Alert ECL and at each ECL change.

- f. **PRIOR ISSUES – UNRESOLVED:** None

2.1.7 DOUGLASS TOWNSHIP EOC (Route Alerting)

- a. **MET:** Objectives 1, 2, 3, 4, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 5

Issue No.: 35-99-05-A-06

Description: The RO was unable to address the use of a direct-reading dosimeter (0-20 Roentgens [R]) if an emergency worker was to exceed 25 R for a life-saving situation. The individual was unaware that the Township's radiological inventory has five 0-200 R dosimeters and that a 0-20 R can be re-zeroed and used again.

The RO did not distribute the individual Dosimetry/KI Report Forms prior to the teams leaving the EOC to perform supplementary route alerting for the hearing-impaired. (NUREG-0654, K.3.a. and K.3.b.)

Recommendation: The RO and the entire Douglass Township EOC staff should receive radiological training.

Schedule of Corrective Actions: The RO and the entire Douglass Township EOC staff will receive additional radiological training.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 5

Issue No.: 35-97-05-A-09

Description: The inventory sheet accompanying radiological equipment at the EOC was out of date and could not be used to verify the actual quantities of equipment items available. The date on the inventory sheet was nearly two years old (October 18, 1995). Handwritten changes made on the sheet were not dated or signed, so their accuracy could not be checked. Because the pre-exercise agreement precluded opening boxed supplies to physically inventory equipment, the actual quantities were not verified. (NUREG-0654, K.3.a.)

Corrective Action Demonstrated: The receipt for dosimetry, survey meters, and KI (bulk issue) from the Berks County EMA dated August 11, 1999 was available. The receipt showed the quantities of dosimeters, chargers, thermoluminescent dosimeters (TLD), and KI with expiration dates and

radiological forms. In accordance with the extent-of-play agreement, the sealed box upon which the form was found was not opened.

- f. **PRIOR ISSUES – UNRESOLVED:** None

2.2 CHESTER COUNTY

2.2.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 3, 4, 5, 9, 13, 14, 15, and 16
- b. **DEFICIENCY:** Objectives 10 and 11

Issue No.: 35-99-10/11-D-02

Description: Chester County emergency operations personnel failed, on three occasions, to transmit and confirm receipt of and broadcast of EAS messages with the following EAS stations: WPHT (1210 AM), WCOJ (1420 AM), and WPHE (690 AM). (References: Chester County RERP, pages 7 [7], 22 j. [5], E-3-3F, E-4-1B, E-4-3G, E-4-6 to 12; FEMA-REP-14, pages D.11-1 and D.11-2; and FEMA letter dated April 2, 1998 [revised February 2, 1999], Subject: *Guidance for Providing Emergency Information and Instructions to the Public for Radiological Emergencies Using the New Emergency Alert System.*)

The first Alert and Notification (A&N) sequence began at 1730 during the Alert ECL, when Chester County decided to advise the public, by simulated activation of the EAS at 1743, that an incident had occurred at the LGS and that citizens should review emergency information contained in the telephone book and listen to the EAS station for official information and instructions.

The second A&N sequence began at 1945, during the General Emergency (GE) ECL, when the decision was made to release a simulated EAS message at 1958 announcing that a (simulated) evacuation of residents within 10 miles of the LGS had been ordered by the Governor.

The third A&N sequence began at 2029, during the GE ECL, when Chester County personnel announced that a simulated EAS message would be released at 2042 to repeat the information contained in the second A&N sequence EAS message.

There is no evidence to indicate that pre-scripted EAS messages were provided to the EAS stations, that receipt of the messages was verified, or that messages were broadcast and rebroadcast at regular intervals to ensure the public was informed of important emergency information. (NUREG-0654, E.5. and E.7.)

Recommendation: The potential impact of failing to notify the EAS stations and to confirm the receipt of, broadcast, and rebroadcast of three EAS messages within the required timeframe on three separate occasions is significant. Chester County must follow its plans and procedures to ensure that the EAS stations are notified, the appropriate pre-scripted EAS messages are provided, the EAS stations verify the authenticity of the messages, and the messages are broadcast to the public and rebroadcast at regular intervals. Remedial actions and exercises should be conducted within 120 days of the exercise date.

Remedial Action Demonstrated: The capability to promptly alert and notify the public within the 10-mile EPZ and disseminate instructional messages to the public on the basis of decisions by appropriate State and local officials was adequately demonstrated by Chester County during the December 7, 1999, remedial exercise. The first A&N sequence started at the Alert at 1040 and was completed by 1051; the second A&N sequence started at 1245 during the GE and was completed by 1259. These A&N sequences were accomplished when the County (simulated) activating their fixed siren system, issued an EAS message, and followed up with a press release. During the two A&N sequences, the pre-scripted EAS messages listed in the County plan were used following each siren activation. The EAS station was notified by the County PIO via telephone to ensure the authenticity of the messages and was advised to rebroadcast the EAS message every 15 minutes.

The capability to coordinate the formulation and dissemination of accurate information and instructions to the public was also demonstrated by Chester County during the remedial exercise. The Chester County PIO prepared and distributed press releases that were faxed to pre-selected organizations upon approval from the Chester County Director of Emergency Services. These press releases referenced the emergency information in the telephone book, but did not include the pre-scripted information for transients concerning reception center locations, what to leave and what to take when evacuating, and evacuation routes in terms of familiar landmarks and boundaries for the affected area(s). On one EAS message, the PIO did not specify whether the Governor ordered or recommended evacuation of the public. However, the information that was released was accurate and up-to-date.

Schedule of Corrective Actions: Chester County EOC did transmit, via fax, press releases containing EAS messages and did simulate confirmation of such messages with the following EAS stations: WPHT (1210 AM) and WCOJ (1420). **NOTE:** WPHE (690 AM) was not in service during the exercise.

1. Chester County will conduct remedial actions and exercise within 120 days of the exercise date.
2. PIO implementing procedures will be reviewed for consistency with the

Chester County RERP and aligned to incorporate all of the following:

- a. Fax receipts will be attached to or incorporated into the EAS messages.
- b. An actual message verification call to EAS stations will be made.
- c. Additional message verification calls will be simulated.
- d. EAS messages will be separate and distinct from Special News Broadcasts and Press Releases.
- e. EAS messages will be sequentially numbered and contain a time and date block.

Fifteen (15) minute rebroadcast requests will be incorporated into the EAS messages **in bold letters**. Fax machines will be reprogrammed to send EAS messages to EAS stations rather than including them in the broadcasts to all media during the scheduled Remedial Exercise in December 1999.

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 11 and 12

Issue No.: 35-99-11-A-07

Description: Press releases issued by staff at the Chester County EOC during the remedial exercise on December 7, 1999, referenced only the use of the telephone book's emergency information. The releases did not include pre-scripted information for transients containing a description (in terms of familiar landmarks) of the location of reception centers; what to leave and what to take when evacuating; and a description (again, in terms of familiar landmarks and boundaries) for the affected area(s). On the second EAS message, the PIO did not specify whether the Governor ordered or recommended evacuation of the public. (NUREG-0654, E.5. and E.7.)

Recommendation: The Chester County PIO should ensure that information concerning evacuation routes, what to take and leave behind, and the location of reception centers is included in press or news releases for transients, especially when this information is not provided in EAS messages. Also, the PIO should ensure that the EAS message content is properly completed (i.e., everything is circled that needs to be) prior to release.

Schedule of Corrective Actions: The PIO requirements will be demonstrated during the Peach Bottom REP exercise in fiscal year 2000.

Issue No.: 35-99-12-A-08

Description: Several Chester County press releases did not specify the time of issuance and the current ECL. (NUREG-0654, E.7. and G.4.b.)

Recommendation: While preparing the press releases, the Chester County PIO should specify the current ECL and the time the press release was issued.

Schedule of Corrective Actions: During the scheduled Remedial Exercise in December 1999, Chester County press releases incorporated the current ECL into text body. The time of such messages was recorded into PIO record book.

Press releases will be sequentially numbered and have time and date blocks incorporated. Press releases will have a separate and distinct ECL incorporated.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objectives 3, 12, and 13

Issue No.: 35-97-03-A-10

Description: The Assistant Director of the County EOC did not hold any briefings to allow staff to report on the status of their response actions. EOC operations would be improved if periodic updates were conducted. For example, the agricultural representative provided a recommendation for sheltering farm animals to the PIO very late in the exercise. The PIO stated during the post-exercise debriefing that she would have issued a press release to address this precautionary protective action if she had been aware of it. (NUREG-0654, A.1.d. and A.2.a.)

Corrective Action Demonstrated: A total of ten briefings were conducted during the exercise. These briefings provided the opportunity to update the EOC staff on current actions and, for each staff member, to provide information on actions in their specific area.

Issue No.: 35-97-12-A-11

Description: News releases were not coordinated among the risk counties, as required by the extent-of-play agreement. After review by the PIO, press releases were faxed (or attempts were made to fax them) to the other risk counties, PEMA, and the media outlets pre-programmed into the EOC fax machine. However, not all press releases were sent to the risk counties, and no evidence was found to indicate that any of the Chester County releases were received by PEMA. (NUREG-0654, E.5. and G.4.a.)

Corrective Action Demonstrated: The news releases were coordinated with the Berks County EOC and Montgomery County EOC. Upon their issuance, the press releases were faxed to these neighboring counties, PEMA, PECO Energy Company, and several TV and radio stations and local newspapers.

Issue No.: 35-97-12-A-12

Description: In several instances, Chester County press releases contained potentially confusing or inaccurate information. None of Chester County's twelve press releases clearly indicated that they had been issued by Chester County. Press release #9 stated that (1) there had been a release of radiation, (2) residents should continue to evacuate, and (3) there was still no immediate threat to residents inside the 10-mile EPZ. The fact that there had been a release and an evacuation had been ordered indicates that there was at least some threat to the EPZ population. Releases #11 and #12 stated that Governor Ridge had announced that residents who had evacuated the EPZ were permitted to return to their homes. The directive to return was not issued during the exercise. (NUREG-0654, E.7., G.4.a., and G.4.c.)

Corrective Action Demonstrated: The contents of the nine Chester County press releases were accurate and clear. The press releases were clearly titled as Chester County press releases.

Issue No.: 35-97-13-A-13

Description: Although the rumor control staff was diligent and gave correct responses to callers, they did not identify rumors that a contractor was offering radiological decontamination services to local citizens. The PIO had asked the Rumor Control Supervisor to be aware of and bring to her attention any trends in calls that might require a response on the part of the PIO.

Corrective Action Demonstrated: At 2054 hours, the rumor control staff identified a trend in calls involving someone trying to sell decontamination goods or services. This trend was conveyed by the Rumor Control Supervisor to the PIO.

f. PRIOR ISSUES – UNRESOLVED: Objective 30

Issue No.: 35-97-30-A-14

Description: The extent-of-play agreement required that liaisons from PennDOT and PAANG demonstrate a shift change during the exercise. No liaison from PennDOT was present at the Chester County EOC during the exercise. (NUREG-0654, A.4.)

Reason ARCA Unresolved: No shift change was demonstrated for the position of PennDOT liaison because no representative from PennDOT reported to the EOC during this exercise. This issue has been transferred from Chester County to the Commonwealth of Pennsylvania.

Recommendation: See Section 1.1, Issue No.: 35-99-30-A-02.

Schedule of Corrective Actions: Concur with the issue. Chester County EMC sent correspondence to PennDOT, Chester County Maintenance Manager, West Chester, PA. dated July 19, 1999 requesting a liaison representative for Tuesday, September 14, 1999 at 1600, per PA EOP, Annex E, E-33, 22 (h). No written or verbal reply was received.

On August 20, 1999, the Assistant Chester County Maintenance Manager was contacted by the Chester County Radiological Officer. The assistant manager stated that as per prior exercises, PennDOT would be available by telephone. He also stated that the manager would have to be contacted after August 30, 1999, to authorize representation at the exercise.

On September 3, 1999, the Chester County Maintenance Manager returned the Chester County Radiological Officer's call and stated that he would not send anyone to the exercise but instead would fax a list of five names with telephone numbers to be contacted in sequential order if a need arose. A list of names and numbers was faxed that day.

2.2.2 EMERGENCY WORKER MONITORING/DECONTAMINATION STATION (Lionville Middle School)

- a. **MET:** Objective 5
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 22

Issue No.: 35-99-22-A-09

Description: When a "contaminated worker" was still found to be contaminated, he was not referred to a medical facility as required by the Chester County plan (page E-19, Section B.3.b). In addition, when an emergency vehicle was found to be contaminated, emergency workers did not know who would decontaminate the vehicle. This information is provided on page E-13-21, Section B.8.a. of the Chester County plan.(NUREG-0654, K.5.b.)

Recommendation: The monitoring personnel should receive additional training in following the county plan and procedures.

Schedule of Corrective Actions: Concur.

1. Chester County will provide additional training to monitoring personnel.
2. Chester County will attempt to recruit additional fire companies to participate in future training and exercises.

3. Chester County will explore the use of other resources to staff Emergency Worker Monitoring/Decontamination stations.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.2.3 RECEPTION CENTER (Stetson Middle School)

- a. **MET:** Objective 5
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 18

Issue No.: 35-99-18-A-10

Description: “Reception Center Handouts,” samples of which are provided in the Chester County plan, were not distributed to evacuees at the Chester County reception center at Stetson Middle School, as required by the plan (Appendix 12, Annex E, page E-12-F). (NUREG-0654, J.12.)

Recommendation: The reception center handout should be distributed to evacuees as required by the Chester County plan.

Schedule of Corrective Actions: Concur. Some of the volunteer participants the night of the exercise had no prior training. The “Reception Center Handout” information was not shared with all participants.

1. Additional training will be provided to Reception Center volunteers.
 2. Additional handouts will be provided.
 3. Chester County will provide clear instructions to Reception Center volunteers with an EOC point of contact listing in case of questions.
- d. **NOT DEMONSTRATED:** None
 - e. **PRIOR ISSUES – RESOLVED:** None
 - f. **PRIOR ISSUES – UNRESOLVED:** None

2.2.4 MONITORING/DECONTAMINATION/MASS CARE CENTER (Fred Engle Middle School)

- a. **MET:** Objective 5
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 18 and 19

Issue No.: 35-99-18-A-11

Description: Proper survey techniques were not employed for monitoring vehicles at the Chester County monitoring/decontamination/mass care center at Fred Engle Middle School. The survey instrument was operated using the "10X" scale instead of the "1X" scale. Monitoring of the interior of the vehicles was not conducted, as required in the standard operating procedures (SOPs) (Attachment A, Appendix 5, page E-5-25). Decontamination of vehicles was not demonstrated in accordance with the team's "Monitoring and Decontamination Team Briefing Guide," page 9. In addition, the background radiation level was never determined by either the evacuee or the vehicle monitors prior to conducting any monitoring activities at the Chester County facility, as required in the SOPs (Attachment A, Appendix 5, page E-5-17). (NUREG-0654, J.12.)

Recommendation: Monitoring teams should be trained in proper monitoring techniques and in following their plans and procedures.

Schedule of Corrective Actions: Concur. Chester County experienced extreme difficulty in recruiting volunteer fire companies in the southern portion of the county. Some of the exercise participants may not have received prior training.

Chester County will provide additional training.

1. Chester County will provide additional training to monitoring personnel.
2. Chester County will attempt to recruit additional fire companies to participate in future training and exercises.
3. Chester County will explore the use of other resources to staff Emergency Worker Monitoring/Decontamination stations.

Issue No.: 35-99-18-A-12

Description: Walkways in the monitoring/decontamination/mass care center were not covered by paper (and covering was not simulated) to control the spread of contamination, as required by the extent-of-play agreement. Only five teams were present at the Chester County facility; the extent-of-play agreement called for six teams. (NUREG-0654, J.12. and N.1.a.)

Recommendation: The monitoring personnel should receive additional training in contamination control procedures. The extent-of-play agreement should be followed, and the county plan should be revised to address the setup of the facility and covering of walkways.

Schedule of Corrective Actions: Concur. The following corrective actions will be taken:

1. Chester County will provide additional training to monitoring personnel.
2. Chester County will attempt to recruit additional fire companies to participate in future training and exercises.

Issue No.: 35-99-19-A-13

Description: Adequate sleeping space, parking, and toilets were not available at the monitoring/decontamination/mass care facility to manage the maximum number of evacuees called for in the Chester County Plan (Appendix 12, page E-12-A-3), which states that the facility's capacity is 1,500 persons. According to the American Red Cross planning guidelines, the facility is capable of managing only about 800 persons (NUREG-0654, J.10.h.)

Recommendation: The county should reevaluate the capacity of all mass care centers to ensure that capacity needs will be met and that the number of evacuees in each center will not exceed American Red Cross planning guidelines. If necessary, additional centers should be designated.

Schedule of Corrective Actions: Concur. The facility in question, Fred S. Engle Middle School, contains 98,500 gross square feet. In addition, there are nine portable classrooms containing an additional 8,208 gross square feet. Chester County has assigned 1,500 as the facility capacity. The American Red Cross planning guidelines apparently assigned 800 as the facility capacity.

Chester County will meet with American Red Cross and PEMA representatives to re-evaluate all shelters in the county and establish a uniform capacity for each facility.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.2.5 EAST PIKELAND TOWNSHIP EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.2.6 EAST VINCENT TOWNSHIP EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 14

Issue No.: 35-99-14-A-14

Description: No expiration date for the KI was available, as required by the extent-of-play agreement. (NUREG-0654, J.10.e. and N.1.a.)

Recommendation: The expiration date of the KI should be shown on the inventory sheet.

Corrective Action Demonstrated: Resolved when the PECO liaison provided the sealed kit to the Project Officer on September 17, 1999, satisfying that the shelf life for the KI had not expired.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.2.7 NORTH COVENTRY TOWNSHIP EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None

- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.2.8 PHOENIXVILLE BOROUGH EOC (Route Alerting)

- a. **MET:** Objective 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.2.9 UWCHLAN TOWNSHIP EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, 17, and 30
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:**

Issue No.: 35-97-30-A-16

Description: Uwchlan Township was not able to demonstrate the capability to staff its EOC on a 24-hour basis; two individuals were on both the first and second shift in different positions. Other individuals filled staff positions on shifts one and two for which they were not designated on the EOC roster. No shift roster was prepared for either shift during the exercise, so there was no record of the names of staff who filled the EOC positions on either shift. (NUREG-0654, A.4.)

Corrective Action Demonstrated: Two complete, individual staff rosters were developed for the entire 24-hour operation of the EOC. An individual shift change was demonstrated for each EOC position.

f. **PRIOR ISSUES – UNRESOLVED:** None

2.3 MONTGOMERY COUNTY

2.3.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 4, 9, 10, 13, 14, 15, 16, and 31
- b. **DEFICIENCY:** Objectives 3, 5, 10, 11, and 12

Issue No: 35-99-03/05/11/12-D-03

Description: Emergency operations were not adequately demonstrated by the Montgomery County Office of Emergency Preparedness (OEP) staff as follows:

OBJECTIVE 3

- When the OEP Coordinator recognized that the 15-minute requirement for preparing, transmitting, and broadcasting the EAS message (following siren activation at the initial A&N sequence) had not been met, he took no action. The Coordinator did not confer with his staff concerning what actions to take and did not call the State EOC to seek clarification concerning the activation.
- The current version of the RERP (Revision 0), dated June 1999, was not made available to the EOC staff. The reference copy of the RERP provided in the EOC (Revision 15) was out of date. The staff relied solely on their implementing procedures (IPs).
- No information regarding the purpose and maintenance of IPs is provided in the RERP. The IPs used by EOC staff are not clearly referenced in the plan; they are briefly addressed on pages iii and iv, where a footnote suggests that the IPs supersede the plan until IP changes are included in the next plan revision.
- A key resource used by the EOC staff, called the "Directory" (which is a supplement to the plan that contains important reference databases and lists), contains some inaccurate information because it is out of date.
- The current County RERP (June 1999, Revision 0) does not provide capacity information for each of the 13 monitoring/decontamination

stations/mass care centers. It does provide the total capacity for all 13 designated facilities (page E12-2-1), but the capacity for each individual facility is not given. A table of capacities is available in a separate document (Attachment 2, MCC-IP-2-1, "Mass Care Activity Summary") that is not referenced in the plan. However, the total capacity for all 13 centers (5,050 persons), as indicated in Attachment 2, does not agree with the number needed (5,101 persons) or the total number available (5,250 persons) as stated in the plan.

- The OEP Coordinator meetings and briefings were not comprehensive or interactive. The few briefings that were provided were narrowly focused and did not solicit or provide an opportunity for input from the EOC staff. The Coordinator did not review EAS message and press release content with the PIO.
- Activity logs were not systematically maintained. Standard forms were not used in many cases, and those logs that were prepared (on note paper) often omitted identifying and other key information. IPs were not used; data were missing from most of the IPs. A log of EAS messages was not established and maintained.
- Several EOC staff did not follow their IPs, and plan requirements were not met. For example, RACES operators did not follow IP D-15 concerning the announcement on the RACES network of the Governor's declaration of "State of Disaster Emergency". The PIO did not maintain a log of information provided to the press. The radiological staff did not update weather information on the designated EOC display during the exercise (IPs B-17, C-19, D-19), and some municipalities did not receive regular updates on weather conditions, although the County has promised to provide such updates. This information is essential in assessing the potential for radiation exposure by emergency workers and the public. The rumor control number was not publicized in media briefings, EAS messages, or press releases (see Objectives 11 and 12). At the evacuation, the rumor control manager did not receive EAS messages and was unable to review them with staff – especially the evacuation EAS message.

OBJECTIVE 5

- The radiological briefing to EOC staff omitted information concerning emergency worker exposure limits and instructions on how to complete Dosimetry/KI Report Forms. Staff who were issued radiological equipment were unsure of their exposure limits, and the Dosimetry/KI Report Forms were not used to record any of the required information.

- According to the County RO and OEP Coordinator, the DRDs are placed in sealed boxes and changed out every four years. It is unclear, then, how the dosimeters can be leak tested annually as certified in PEMA's annual letter of certification to FEMA.
- Several OEP staff members stated that they have never received any training concerning radiological exposure control and use of radiological forms and equipment outside the context of REP exercises and drills.
- Written instructions regarding dosimetry reading procedures were not available for EOC staff. The County RERP (Section III.A, page E-13-2-2) states that dosimetry reading procedures "... are delineated in County and municipal procedures ..." However, the relevant section of the plan is not cited and is not available.

OBJECTIVE 11

- Some press releases disseminated following the EAS activations contained no supplemental information – they provided only the information contained in the original EAS message.
- Press releases contained no mention of changes in evacuation routes due to the closure of some plan-designated routes, although some EOC staff incorporated the closures into their exercise play.
- Press releases did not provide instructions for transients without shelter.
- The rumor control telephone number was not included in any of the press releases.
- Interviews with the EOC staff revealed that the policy of Montgomery County is not to provide livestock advisory information to the public but to provide it directly to farmers through the USDA Agricultural Extension Service. The PIO provided livestock advisory information to the media in Press Release #4. An adjacent county (Berks) does provide livestock advisory information in its press releases to the general public. These inconsistencies could result in confusion.
- Press releases with multiple pages were not paginated, follow-on pages were not date- and time-stamped, and they did not show the source of the message.
- The OEP Coordinator and his designated representative did not maintain a log of the EAS messages that were announced over KYW 1060. The PIO

and rumor control managers were not provided with a copy of the evacuation EAS message (Attachment 4-3).

OBJECTIVE 12

- The press releases were not accurate or up to date, were not consistent with public information brochures, and did not include adequate information and instructions regarding protective actions.
- The media briefing provided inaccurate information or omitted key information concerning:
 - Evacuations routes (changes in evacuation routes were not given to the media).
 - Transients without shelter (no information was provided).
 - The rumor control telephone number (was not provided).
 - The current ECL (the media were informed that the LGS was at the SAE ECL when, in fact, it had been at the GE ECL for more than an hour).
 - A clear differentiation between new and old information was not made during media briefings. (NUREG-0654, A.1.b. A.2.a., K.3.a., K.3.b., K.4, E.5., E.7., G.4.a., G.4.b., and H.10.)

Recommendation: FEMA Region III requires that the following actions be taken to address the Deficiency:

- County plans must be revised to address the concerns identified in the Deficiency, and the plans must be submitted to FEMA for review and approval.
- EOC staff must receive additional training and participate in a practice exercise.
- EOC staff must participate in a remedial exercise to address the concerns identified in the Deficiency within 120 days of the exercise date.

Remedial Action Demonstrated: The capability to direct and control emergency operations at the Montgomery County EOC was demonstrated during the December 7, 1999, remedial exercise. The EMC provided instructions to EOC staff concerning the use of the county's EOP and appropriate IPs; coordinated with key staff members regarding PADs; directed public affairs activities; and met A&N requirements. The EMC frequently conferred individually with each member of his staff concerning what actions needed to be taken. A current version of the RERP was on hand during the remedial drill and information regarding the purpose and maintenance of IPs was listed on page E-21-3 under Section L along with information on total capacities for all special designated facilities had been appropriately revised and updated. The EMC solicited and provided opportunities

for staff input, as necessary. The contents of all EAS messages and press release were reviewed with the PIO. Activity logs (incorporating standard forms rather than notepaper) were systematically used. The IPs were employed correctly and appropriate data were entered, as required. EAS messages were correctly logged.

The emergency workers assigned to the Montgomery County EOC were each assigned a non-self reading dosimeter (TLD) and instructed to turn it in to the County RO at the completion of their assignments. Two DRDs, each with a range of 0-20 R, were used in an Area Kit for all emergency workers in the EOC. A record was made of each TLD and DRD issued. The DRDs in the Area Kit were read every 30 minutes by the RO. Instructions were available on how to use the dosimeters and perform readings every 30 minutes. A dosimeter charger was available in the EOC and was checked by the RO for proper operation. DRDs were zeroed, and initial readings were recorded. Emergency workers were aware of their exposure limits (5 R, 25 R, and 75 R) for the various missions.

The RO provided a radiological briefing to the EOC staff that included information concerning emergency worker exposure limits and instructions on how to complete the Dosimetry/KI Report Forms. EOC staff were aware of their exposure limits, and the proper forms were used to record the required information before issuance. Training for the EOC staff members present during the remedial exercise had been completed; however, training for the entire EOC staff (approximately 130 workers) will not begin until January 2000, as training schedules permit.

The Montgomery County EOC alerted the public by activating (simulated) the fixed siren system located in the 911 center at 1050 for the Alert ECL and at 1255 for the Evacuation Order declared by the Governor. The public was notified at 1052 and 1253, when the EMC called radio station KYW personnel and instructed them to broadcast the appropriate pre-scripted messages. The times required to complete the initial A&N sequences were 10 and 13 minutes, respectively – within 15 minutes of the decision by offsite officials to alert and notify the public. The Montgomery County EMC authorized the A&N sequences. Simulated EAS broadcasts originating from the radio station were verified for authenticity and correctness by the coordinating officials prior to broadcast. However, protective action areas were not described in the supplemental news releases in terms of familiar landmarks and boundaries. The content of these supplemental news releases were not effectively coordinated prior to be released.

Although the Deficiency identified during the September 1999 exercise has been resolved, the capability of the Montgomery County EOC to develop and disseminate accurate information and instructions to the public was not adequately demonstrated during the remedial exercise on December 7, 1999. Additional concerns identified during the remedial exercise have been re-classified as

ARCAs that should be addressed at the next biennial exercise (see below ARCA numbers 35-99-03-A-15, 35-99-11-A-16, and 35-99-12-A-17).

Schedule of Corrective Actions: During scheduled Remedial Exercise in December 1999. [sic] Concur with following comments:

Reference is made that the staff had their Implementing Procedures (IPs) as reference for the exercise.

The IPs are built upon the current version of the plan and the appropriate sections of the plan are attachments to the IPs. Appendix 21 of the Montgomery County Plan (Supporting Plans and Implementing procedures) Section L lists the purpose and the specific titles of all IPs and Standard operating Procedures (SOPs) used by the Montgomery County EOC.

Request this Issue be removed. Master Resource Directory in former Deputy Coordinator's office was available and resource information was available in the Operations Room. Two computer aided dispatch (CAD) stations in the Operations Room have all information needed for the exercise. Also, located in the Operations Room are two PCs, connected to LAN which has access to emergency management, municipal, and SARA phone lists. These back-ups were pointed out to the evaluators.

Request this Issue be removed.

- "EOC Staff did not follow their IPs" is a misleading statement. It implies that nothing was done right by the EOC staff. Which is not true.
- Briefings from the podium were intended to be brief because of Electronic Status Board.
- Need more information on which municipalities did not receive weather reports. Weather reports were part of the verbal messages to municipalities, if there was a change from previous conditions.
- For something which was to be simulated, the EAS log is mentioned twice. KYW will broadcast what is in the best interest of public. And they do this very well every day.

Following Actions will be taken:

1. Objective 3: Direction and Control

The Montgomery County EOC Staff will be provided additional training. The EOC Staff will be instructed to acknowledge receipt of the training by signing and dating an acknowledgement form. PECO Nuclear Emergency Preparedness and Montgomery County will cooperate in the design and delivery of the training.

The Montgomery County Limerick RERP was discussed with specific attention given to such items as the Mass Care Centers and Capacities. The areas requiring changes and or updates will be addressed and revised accordingly. The Implementing Procedures will be referenced in the Plan and the information will be cross checked to be certain that the information which appears in the Implementing Procedures corresponds to the information contained within the Plan (RERP). This includes the names and locations of Mass Care Centers, the Capacity of the Center(s) based upon the American Red Cross information, and the total capacity of the identified mass care centers. Following the Remedial Exercise, the Plan and Procedures will again be reviewed in detail and the Montgomery County Plan will be reworked to be in consonance with the Commonwealth Annex E and adjacent risk county RERPs.

The Implementing Procedures are designed to allow the EOC staff member to record the date and time the action was completed. This notation is a log of the events accomplished by the individual. Through training, the EOC Staff will be made aware of the need to time and date each activity performed. Additionally, the format of the Implementing Procedures will be changed from Portrait to Landscape to allow additional space for the logging and notes.

2. Objective 5: Emergency Worker Exposure Control

Montgomery County will have documentation available for the remedial exercise regarding the annual inspection for all dosimetry equipment used within the County for RERP. Additionally, a radiological briefing will be conducted during the remedial exercise which will include emergency worker exposure limits and instructions on how to complete the Dosimetry KI report forms.

3. Objective 11: Public Instructions and Emergency Information

In the case of EAS messages, all pre-scripted messages will be formatted with an "Authorized By _____" block to allow the OEP Director to Sign/Initial the release of the EAS message after his review. Multiple page EAS messages and/or press releases will be made with automatic page numbering, the date and time, and source of the message.

A log of press releases and EAS messages will be maintained using preprinted labels.

4. Objective 12: Emergency Information – Media .

The Public Information Officer assisted by the Director of Public Safety will conduct a Press Briefing. The County RO may be present at the briefing to assist with questions related to radiological information. Detailed briefing materials will be available for the use of the PIO and assistants.

Issue No.: 35-99-10-D-04

Description: The first A&N sequence, which began at 1730 during the Alert ECL, was not completed within the required 15 minutes because of communication failures. As a result, the Montgomery County OEP Coordinator did not become aware of the EAS activation until six minutes after the 15-minute window had closed, and the EAS message was never sent. (NUREG-0654, E.6.)

Recommendation: Montgomery County should ensure that all A&N sequences are completed within the required 15-minute time period.

Remedial Action Demonstrated: The ability of Montgomery County to complete A&N sequences within the required 15-minute timeframe was properly demonstrated during the second and third A&N sequences at the exercise on September 14, 1999. During the second A&N sequence, the decision was made at 1945, sirens were activated at 1955, and EAS notification was completed at 1958. For the last A&N sequence, the decision was made at 2029, sirens were activated at 2039, and EAS notification occurred at 2042.

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 3, 11, and 12

Issue No.: 35-99-03-A-15

Description: The key resource manual (directory) used by the Montgomery County EOC staff during the remedial exercise on December 7, 1999, is still incomplete regarding reference databases and lists. In addition, the Rumor Control Manager did not demonstrate receipt of EAS messages and distribution of the information to his staff. The municipalities did not receive weather updates. (NUREG-0654, A.2.a.)

Recommendation: The key resource manual should be updated through use of an Access database or other appropriate means. The staff should receive additional training on the importance of providing the Rumor Control Manager with all relevant information so that the manager can keep his/her staff informed of the proper response to rumors received. The municipalities should be kept abreast of weather conditions, especially when a potential evacuation is imminent.

Schedule of Corrective Actions: The electronic key resource manual will be updated.

Issue No.: 35-99-11-A-16

Description: EAS messages and follow-up news releases/special news bulletins did not provide important information to individuals in Montgomery County's 10-mile EPZ during the remedial exercise on December 7, 1999. The messages lacked instructions for non-residents; did not identify protective action areas in terms of familiar landmarks/boundaries; did not include a description of current emergency conditions at the nuclear plant or state whether the potential for or actual release of radiation was occurring; did not provide the current ECL; and did not include rumor control telephone number(s). The special news broadcasts did not include instructions (e.g., agricultural advisories, and special instructions for status of school children and actions to be followed by the parents) as required. Evacuation routes to be followed from each community were not listed; instructions were not provided on what should or should not be taken to a mass care centers; and, no date/time was stamped on each EAS message issued. (NUREG-0654, E.5. and E.7.)

Recommendation: The prescribed EAS messages should include all appropriate information as described in FEMA's EAS guidance, approved on February 2, 1999.

Schedule of Corrective Actions: Prescribed EAS messages will include all appropriate information.

Issue No.: 35-99-12-A-17

Description: The press releases issued at the Montgomery County EOC during the remedial exercise on December 7, 1999, were not accurate or up to date and were not consistent with the public information brochures. For example, Press Release #2 contained an incorrect time when the Governor of Pennsylvania announced "that an emergency presently exists at the Limerick Generating Station in Montgomery County, Pennsylvania." The time was listed as 11:20 in Press Release #2 and at 1020 (the correct time) in Press Releases #1 and #3. Press Release #3 used inaccurate ECL terminology such as "the Limerick Generating Station is at the General Classification ...", and in the next sentence "... declared the General classification ..." instead of using the term "General Emergency." Press Release #3 also targeted its audience in an inconsistent manner – the release used the terms "Montgomery County Residents" and "Evacuees" interchangeably and no reference was made to transients. (NUREG-0654, E.7. and G.4.a.)

Recommendation: The PIO staff should receive additional training concerning the need to generate press releases that contain accurate and up-to-date

information and terminology that is consistent with that used in the public information brochures.

Schedule of Corrective Actions: The PIO staff will receive additional training.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 16

Issue No.: 35-97-16-A-30

Description: School representatives did not know how to correctly implement their procedures. There was confusion as to what information was needed during the Alert and Site Area Emergency (SAE) phases of this exercise. The county school representatives were leaving voice mail telephone messages rather than contacting individuals who could receive and respond to the telephone calls. (NUREG-0654, J.10.d. and J.10.g.)

Corrective Action Demonstrated: During the school drill, school and transportation representatives at the Montgomery County EOC promptly placed calls to school districts, private schools, and transportation providers; advised them of the emergency at the LGS; and instructed them to put their plans into effect. Care was taken to inform the appropriate representative or their designated next-in-command. No messages were left on voice mail.

Issue No.: 35-97-16-A-31

Description: The *Pottsgrove School District Radiological Emergency Response Plan for Incidents at the Limerick Generating Station* listed unmet transportation needs, but the list was not updated in the Montgomery County unmet needs logs. (NUREG-0654, J.10.d. and J.10.g.)

Corrective Action Demonstrated: During the school drill, calls were made to all school districts and transportation providers by staff at the Montgomery County EOC. At 1051, staff confirmed that there were no unmet transportation needs for any of the school districts, including the Pottsgrove School District.

- f. **PRIOR ISSUES – UNRESOLVED:** Objectives 3, 11, 12, and 30

Issue No.: 35-95-03-A-20

Description: At 1917, when the EOC received the protective action recommendation (PAR) message from the State about sheltering animals, neither the EMC nor his deputy notified the EOC staff (except the Agricultural Agent). This information could have been critical to the PIO, rumor control staff, and

other county agencies. In the future, the EMC or the deputy should notify all EOC staff members of key events so that everyone is aware of the current situation. (NUREG-0654, A.1.d. and A.2.a.)

Reason ARCA Unresolved: The PIO disseminated livestock advisory information in Press Release #4.

Recommendation: Montgomery County should coordinate their policy regarding livestock advisories with adjoining counties to minimize confusion and concern by the general public. The plan and procedures should be reviewed and revised to clarify the PIO's responsibilities regarding the dissemination of livestock advisory information.

Schedule of Corrective Actions: Concur. Montgomery County will review its policy regarding livestock advisories with adjoining counties.

Issue No.: 35-95-12-A-22

Description: The PIO was not aware that public information brochures were used or that a county PIO briefing should report on up-to-date emergency conditions and provide information on current protective actions, evacuation routes, reception centers, congregate care centers, KI, special populations, and transportation-dependent individuals. (NUREG-0654, E.7. and G.4.b.)

Reason ARCA Unresolved: The PIO at Montgomery County was not aware during this exercise that the media briefing should include information regarding emergency conditions, ECLs, sheltering and stored feed for farm animals, rerouting for closed evacuation routes, instructions for transients without shelter and transportation-dependent individuals, and the rumor control telephone number.

Recommendation: The PIO should receive additional training about what type of information to include in a press briefing.

Schedule of Corrective Actions: Concur. The PIO will receive additional training about what type of information to include in a press briefing.

Issue No.: 35-97-11-A-17

Description: Montgomery County EOC staff did not fax copies of EAS messages to the State EOC and the Utility Emergency News Center (ENC) following each simulated EAS broadcast, as required by the extent-of-play agreement and the county plan. (NUREG-0654, A.1.b., E.5., E.7., and G.4.a.)

Reason ARCA Unresolved: The Montgomery County EOC Coordinator did not fax copies of the EAS messages to the support counties (Bucks and Lehigh), the State EOC, or the ENC following each simulated EAS broadcast.

Recommendation: The Montgomery County EOC Coordinator should fax copies of the EAS messages to the support counties (Bucks and Lehigh), the State EOC, and the ENC following each simulated EAS broadcast during the next exercise.

Schedule of Corrective Actions: Concur. Copies of EAS messages will be faxed to support counties, the State EOC and the ENC following each simulated EAS broadcast during next scheduled Biennial Exercise.

Issue No.: 35-97-11-A-18

Description: EAS messages lacked some important content. No instructions for non-residents and no description of the potential for or actual release of radioactivity were provided. The messages did not identify protective action areas in terms of familiar landmarks and boundaries (for example, by naming the affected municipalities), and there were no follow-up messages or news releases containing this information. (NUREG-0654, E.7.)

Reason ARCA Unresolved: EAS messages again lacked important content during this exercise. No instructions for non-residents were provided. The messages did not identify protective action areas in terms of familiar landmarks and boundaries (for example, by naming the affected municipalities), and there were no follow-up messages or news releases containing this information. The messages also did not include a description of current emergency conditions at LGS or of the potential for or actual release of radioactivity. There was no mention of the current ECL in the messages. The information about evacuation routes was incorrect, and the messages referred people to the emergency information in the telephone book.

Recommendation: The prescribed EAS messages should be rewritten to incorporate the missing information. Also, a checklist of items to include in the EAS messages should be developed so that all pertinent information is provided.

Schedule of Corrective Actions: Concur. The pre-scripted EAS messages will be written to incorporate the pertinent information.

Issue No.: 35-97-12-A-19

Description: News releases were not coordinated with the other risk counties prior to release to the media as called for in the county plan (Appendix 4, paragraph II.O.) and in the extent-of-play agreement. (NUREG-0654, A.1.b., E.5., and E.7.)

Reason ARCA Unresolved: Press releases were coordinated with Bucks County but not with Lehigh County during the exercise.

Recommendation: News releases should be coordinated with all support counties.

Schedule of Corrective Actions: Concur. News releases will be coordinated with all support counties.

Issue No.: 35-97-30-A-20

Description: The following four organizations did not demonstrate a shift change during the exercise, as required by the extent-of-play agreement: PennDOT, PSP, PAANG, and the Montgomery County Transportation Group. (NUREG-0654, A.4.)

Reason ARCA Unresolved: The Montgomery County OEP did not demonstrate a shift change for a PennDOT or PAANG liaison. Replacement personnel were identified but did not report to the EOC during the exercise, as required. This issue has been transferred to the Commonwealth of Pennsylvania.

Recommendation: See Section 1.1, Issue No.: 35-99-30-A-03.

Schedule of Corrective Actions: Concur.

2.3.2 EMERGENCY WORKER MONITORING/DECONTAMINATION STATION (Upper Perkiomen High School)

- a. **MET:** Objective 5
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 22

Issue No.: 35-99-22-A-18

Description: Two members of the Upper Perkiomen Valley Ambulance Association were in attendance to monitor emergency workers; however, neither had been trained in monitoring practices or use of instruments. (NUREG-0654, K.5.b.)

Recommendation: Personnel should be trained to provide monitoring of emergency workers during an activation of this monitoring and decontamination facility.

Schedule of Corrective Actions: Concur. Training will be provided to members of the Upper Perkiomen Valley Ambulance Association.

Issue No.: 35-99-22-A-19

Description: The extent-of-play agreement for this exercise required schematics of the monitoring/decontamination stations to be available showing organization and space management within the facility. A rough floor plan was provided, but that plan did not show facility organization or space management. (NUREG-0654, K.5.b. and N.1.a.)

Recommendation: A detailed schematic of the emergency worker monitoring/decontamination station should be prepared showing organization and space management within the facility, as required by the extent-of-play agreement.

Schedule of Corrective Actions: Concur. A detailed schematic of the emergency workers' monitoring/decontamination station will be prepared showing organization and space management within the facility.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.3.3 RECEPTION CENTER (Willow Grove Industrial Park)

- a. **MET:** Objective 5
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 18

Issue No.: 35-99-18-A-20

Description: The extent-of-play agreement requires a minimum of three evacuees to pass through the Montgomery County reception center; only one evacuee passed through the center and only one strip map was distributed. (NUREG-0654, N.1.a.)

Recommendation: Sufficient evacuees, as defined in the extent-of-play agreement, should be provided at the next exercise.

Schedule of Corrective Actions: Concur. There was a coordination breakdown between various organizations.

- d. **NOT DEMONSTRATED:** None

- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.3.4 MONITORING/DECONTAMINATION/MASS CARE CENTER (Lower Moreland High School)

- a. **MET:** Objective 5
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 18 and 19

Issue No.: 35-99-18-A-21

Description: The manager at the Montgomery County mass care center was not provided with the schematic layout of the center showing the space management for monitoring and decontamination of evacuees, as required by the extent-of-play agreement. (NUREG-0654, J.12. and N.1.a.)

Recommendation: All mass care center schematics should be provided to personnel at each center.

Schedule of Corrective Actions: Concur. The center will have a schematic diagram onsite.

Issue No.: 35-99-19-A-22

Description: The manager at the mass care center did not know the capacity of the center, and the information was not provided in the county plan (Appendix 12). (NUREG-0654, J.10.h. and N.1.a.)

Recommendation: The county plan should be revised to reflect the capacity of each center.

Schedule of Corrective Actions: Concur. The manager will be provided with a schematic on the layout of the facility and the County plan will be accordingly updated.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.3.5 GREEN LANE BOROUGH/MARLBOROUGH TOWNSHIP EOC

- a. **MET:** Objectives 1, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** Objectives 2 and 30

Issue No.: 35-97-02-A-22

Description: Information pertaining to specific protective actions undertaken by Marlborough Township – such as setting up ACPs and TCPs and contacting special populations – was not posted on the status board. (NUREG-0654, H.3.)

Reason ARCA Unresolved: TCPs/APCs and special population information were not posted on the status board during this exercise.

Recommendation: All appropriate information should be posted on the status board during the next exercise. Staff should receive training concerning the posting of information.

Schedule of Corrective Actions: Non-concur. NUREG 0654, H.3. states “Each organization shall establish an emergency operations center for use in directing and controlling response functions.” The EOC was operational during the exercise. The absence of white board posting does not indicate the activity did not occur. Log showed that these activities did occur.

FEMA Response: None of the following documents – EOC Master Log, EOC Security Log, EOC Station Log, 11 EOC Message Forms, and six Appendix 11, Montgomery County, Pennsylvania, Emergency Preparedness Message Forms – reference activities relating to ACPs, TCPs, or Special Populations. Therefore, the issue will remain unresolved. These standards for EOC operations are consistently applied throughout Region III and are based upon the requirements outlined in FEMA-REP-14.

Issue No.: 35-97-30-A-23

Description: Incoming staff were not briefed by outgoing staff as required by the plan and the extent-of-play agreement. (NUREG-0654, A.4. and N.1.a.)

Reason ARCA Unresolved: EOC staff was not briefed by outgoing staff in accordance with the plan and extent-of-play agreement.

Recommendation: Briefing of incoming staff by outgoing staff should be demonstrated during the next exercise.

Schedule of Corrective Actions: Concur. Additional training will be provided to the EOC staff on EOC operations to include briefings.

2.3.6 LOWER FREDERICK TOWNSHIP EOC

- a. **MET:** Objectives 2, 3, 4, 5, 10, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 1, 15, and 17

Issue No.: 35-99-01-A-23

Description: No personnel roster was available to ensure notification of all EOC staff and to demonstrate sufficient staff for continuous 24-hour staffing. (NUREG-0654, A.2.a. and A.4.)

Recommendation: A complete, up-to-date personnel roster should be prepared and maintained at the EOC.

Schedule of Corrective Actions: Non-concur. The Attachment #5 of the Coordinator's IP is a notification list.

FEMA Response: The only IP in the evaluator's packet pertained to Communications. The evaluator's narrative states, "A personnel roster was not used and was not available. It had been lost and not yet replaced." The issue is valid based upon first hand observations and documentation provided by the Federal evaluator.

Issue No.: 35-99-15-A-24

Description: The Lower Frederick Township EOC staff did not request transportation resources as required by the county plan (page 25, paragraphs 2.C.5. and 2.C.6.). (NUREG-0654, J.10.g.)

Recommendation: The required transportation resources should be requested from the county.

Schedule of Corrective Actions: Concur.

Issue No.: 35-99-17-A-25

Description: Staff at the Lower Fredrick Township EOC did not demonstrate preparing the TCPs or conducting radiological briefings for local police, as required by the extent-of-play agreement. (NUREG-0654, J.10.j., K.3.a., and N.1.a.)

Recommendation: The extent-of-play agreement should be followed during the next exercise.

Schedule of Corrective Actions: Concur. The EOC Staff will be provided additional training on radiological briefings and will conduct briefings during next scheduled biennial exercise.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** Objective 30

Issue No.: LIMX91-31R

Description: Because of a lack of volunteers in the EOC, Lower Frederick Township was unable to demonstrate a shift change and provide personnel to staff two shifts. (Objective 30; NUREG-0654, A.4.)

Reason ARCA Unresolved: Lower Fredrick Township did not demonstrate a shift change and briefing as required by the extent-of-play, because sufficient personnel were not available at the local level.

Recommendation: The Township EOC should demonstrate a shift change that includes briefing the incoming personnel during the next exercise.

Schedule of Corrective Actions: Concur. The township EOC will demonstrate the shift change during scheduled next biennial exercise.

2.3.7 LOWER PROVIDENCE TOWNSHIP EOC (Route Alerting)

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.3.8 POTTSTOWN BOROUGH EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.3.9 SCHWENKSVILLE BOROUGH EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, 17, and 30
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 30

Issue No.: 35-97-30-A-24

Description: Both shifts of staff participated in the entire exercise. While the extent-of-play permitted first shift staff to remain for observation and training, there was no changeover briefing or transition of responsibility. Therefore no shift change occurred, as defined by FEMA-REP-14. (NUREG-0654, A.4.)

Corrective Action Demonstrated: EOC staff demonstrated a shift change during the exercise. There was a transition of responsibility for key positions accompanied by a briefing of incoming staff.

f. **PRIOR ISSUES – UNRESOLVED:** None

2.3.10 UPPER FREDERICK TOWNSHIP EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 5

Issue No.: 35-97-05-A-25

Description: During briefings to emergency workers, simulated TLDs were not discussed or issued as required by the plan and the extent-of-play agreement. (NUREG-0654, K.3.a. and N.1.a.)

Corrective Action Demonstrated: During the radiological briefing by the Upper Frederick Township RO, TLDs were discussed in detail, including their function in recording exposure. TLDs were then issued as required by the plan and the extent-of-play agreement.

f. **PRIOR ISSUES – UNRESOLVED:** None

2.3.11 WEST POTTS GROVE TOWNSHIP EOC

- a. **MET:** Objectives 1, 2, 3, 4, 5, 10, 14, 15, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** Objective 30

Issue No.: 35-97-30-A-26

Description: The West Pottsgrove EOC staff did not demonstrate a 24-hour shift change in accordance with the West Pottsgrove Radiological Response Plan (B.2.e.). Because two of the four key personnel were absent due to personal commitments, the EMC decided to forego the shift change and use available personnel. (NUREG-0654, A.4.)

Reason ARCA Unresolved: Again, insufficient personnel were available to demonstrate a shift change. No positions were changed during the exercise.

Recommendation: The West Pottsgrove Township EOC should demonstrate a shift change during the next exercise.

Schedule of Corrective Actions: Concur. The township EOC will demonstrate the shift change during scheduled next biennial exercise.

3. **SUPPORT JURISDICTIONS**

3.1 **STATE AREA OFFICES**

3.1.1 **STATE EASTERN AREA EOC (Hamburg)**

- a. **MET:** Objectives 1, 2, 3, and 4
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

3.2 BUCKS COUNTY

3.2.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 3, 4, 12, and 13
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 12

Issue No.: 35-97-12-A-27

Description: The extent-of-play agreement, the Bucks County plan (pages E-20 and E-7-A-1), and the State plan (page E-16-4) require that support counties prepare and coordinate news releases. The PIO at the Bucks County EOC prepared a news release but did not coordinate the news release with other risk and support jurisdictions. (NUREG-0654, G.4.b., G.4.c., and N.1.a.)

Corrective Action Demonstrated: During the exercise, the Bucks County PIO prepared three news releases and coordinated their content with the Montgomery County EOC and State Eastern Area EOC.

- f. **PRIOR ISSUES – UNRESOLVED:** None

3.2.2 RECEPTION CENTER (Neshaminy Mall)

- a. **MET:** Objective 18
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 5

Issue No.: 35-99-05-A-26

Description: The Bucks County reception center personnel at Neshaminy Mall were not provided with the Dosimetry/KI Report Form for recording TLD serial numbers. Page E-5-B-3 of the Bucks County RERP states that Category C emergency workers should be issued one TLD and a Dosimetry/KI Report Form. (NUREG-0654, K.3.b.)

Recommendation: The required quantity of TLDs and forms should be provided to emergency workers at the reception center.

Schedule of Corrective Actions: Non-concur. The Bucks County plan directly addresses the definition of “Emergency Workers” in direct reference to monitoring and decontamination teams. Reception Center Staff are not listed as Category C Emergency Workers in the County Plan or the State Annex E.

FEMA Response: We have reviewed the non-concurrence comment submitted by the County and find the issue valid for the following reasons. Page E-12 of the Bucks County RERP states that Bucks County will support up to 19,000 evacuees from Montgomery County by agreement with PEMA. The 19,000 evacuees are to report to either the County Line Plaza or the Nashaminy Mall. The Bucks County Sheriffs Department mans both reception centers (page E-4-A-2). Once at the reception center, the evacuees are directed to mass care centers where they are monitored and, if necessary, decontaminated. The monitoring and decontamination teams are specifically used as an example for issuance of Category C Standard Issue (TLD – 1 per emergency responder, and Dosimetry/KI Report Form) because “each individual who meets/directs/monitors possibly contaminated people or vehicles will receive a Category C Standard Issue” (page E-5-B-3). By not providing the Bucks County deputy sheriffs who staff the reception centers with Category C Standard Issue, you are exposing them to possible undetected radiation dosage. Because the reception center staff come in contact with the evacuees before the monitoring and decontamination teams, they should be provided with the same detection equipment.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

3.2.3 **MONITORING/DECONTAMINATION/MASS CARE CENTER** (Armstrong Middle School)

- a. **MET:** Objectives 5 and 19
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 18

Issue No.: 35-99-18-A-27

Description: The Bucks County monitoring/decontamination/mass care center, located in the Cecilia Snyder Middle School, did not demonstrate adequate

contamination control procedures during personnel monitoring. Monitoring personnel walked from a clean area into a potentially contaminated area to monitor the backside of an individual. (NUREG-0654, J.12.)

Recommendation: The monitoring personnel should receive additional training regarding monitoring procedures.

Schedule of Corrective Actions: Concur. Additional training will be provided.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

3.3 LEHIGH COUNTY

3.3.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 3, 4, and 13
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 13

Issue No.: 35-97-13-A-29

Description: Although the Rumor Control Officer at the Lehigh County EOC responded appropriately to most calls, his responses to other calls were inappropriate. For example, he indicated that radiation pills (KI) would be available at the reception center, which is inaccurate. Also, a trend concerning radiation pills was not reported to the PIO. Although the PIO is responsible for the staffing and operation of rumor control, the Lehigh County Officer did not interact with or provide assistance to the Rumor Control Officer. (NUREG-0654, G.4.a., G.4.b., and G.4.c.)

Corrective Action Demonstrated: Rumor control staff fielded 19 rumor calls during the exercise. The calls were handled correctly and clearly, two trends in the rumors were identified, and these trends were communicated to the Emergency Management Director.

f. **PRIOR ISSUES – UNRESOLVED:** Objective 12

Issue No.: 35-97-12-A-28

Description: The extent-of-play agreement and county plan called for the coordination of news releases among risk and support counties. No coordination with other counties was conducted at the Lehigh County EOC. (NUREG-0654, A.1.b., E.5., and E.7.)

Reason ARCA Unresolved: There was no coordination of press releases as required by the plan and the extent-of-play agreement among the risk or support counties, PEMA, or the Utility ENC. Formal press releases were not prepared or distributed, as required by the extent-of-play agreement.

Recommendation: The PIO should ensure coordination of news releases among the organizations involved, as required in the county plan and the extent-of-play agreement.

Schedule of Corrective Actions: Concur. Even though verbal and message communication reflected the correct action was taken regarding notification of PEMA and surrounding counties, no hard copy of a press release was prepared. The PIO will be given additional training.

3.3.2 **RECEPTION CENTER (Pitt-Ohio Express Terminal)**

- a. **MET:** Objectives 5 and 18
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

3.3.3 **MONITORING/DECONTAMINATION/MASS CARE CENTER (Allentown College)**

- a. **MET:** Objective 5 and 19
- b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION: Objective 18**

Issue No.: 35-99-18-A-28

Description: Although a sufficient number of trained monitors were present at Lehigh County's monitoring/decontamination/mass care facility at Allentown College, only one team demonstrated entry monitoring of evacuees. The extent-of-play-agreement requires a demonstration by five entry monitoring teams. (NUREG-0654, J.12. and N.1.a.)

Recommendation: The number of teams specified in the extent-of-play agreement should demonstrate entry monitoring during the next exercise.

Corrective Action Demonstrated: Five monitoring teams demonstrated monitoring on 22 November 1999.

Issue No.: 35-99-18-A-29

Description: The entry monitor and shower monitors at Lehigh County's monitoring/ decontamination/mass care facility at Allentown College did not know the threshold for contamination (0.05 milliRoentgens per hour [mR/h] including background). (NUREG-0654, J.12.)

Recommendation: Radiation monitoring personnel should receive further training concerning the contamination threshold.

Corrective Action Demonstrated: On the evening of November 15, 1999, monitoring and decontamination teams from the Allentown College participated in an out-of-sequence drill along with other Lehigh County teams. All participants knew the threshold for contamination (0.5mR/h).

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4. **SCHOOL DISTRICTS (Out of Sequence: September 14, 1999)**

4.1 **BERKS COUNTY**

4.1.1 **BOYERTOWN AREA SCHOOL DISTRICT (Boyerton Area High School)**

- a. **MET:** Objective 16

- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.1.2 DANIEL BOONE AREA SCHOOL DISTRICT (Amity Elementary Center)

- a. **MET:** Objective 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.2 CHESTER COUNTY

4.2.1 DOWNINGTOWN AREA SCHOOL DISTRICT (Pickering Valley Elementary School)

- a. **MET:** Objective 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.2.2 GREAT VALLEY SCHOOL DISTRICT (Charlestown Elementary School)

- a. **MET:** Objective 16

- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.2.3 OWEN J. ROBERTS SCHOOL DISTRICT (School not demonstrated)

- a. **MET:** None
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 16

Issue No.: 35-99-16-A-30

Description: Because of the selection of Action Plan A (Early Dismissal) by the Owens J. Roberts School District, the District did not demonstrate a school evacuation, the availability of a bus driver, or transportation of evacuated students to the host schools, as required by the extent-of-play agreement. (NUREG-0654, J.10.d., J.10.g., and N.1.a.)

Recommendation: The Owens J. Roberts School District should follow the extent-of-play agreement during the next biennial exercise.

Schedule of Corrective Actions: Concur. The school district followed its EOP during exercise. Their plan calls for early dismissal unless there is insufficient time to do so. The mission of their plan is to unite students and parents as soon as possible. Consequently, the school district did not demonstrate an evacuation consistent with the extent of play.

Chester County will discuss the extent of play with school officials prior to the next LGS exercise and evacuation demonstration will be requested.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.2.4 PHOENIXVILLE AREA SCHOOL DISTRICT (Schuylkill Elementary School)

- a. **MET: Objective 16**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ISSUES – RESOLVED: None**
- f. **PRIOR ISSUES – UNRESOLVED: None**

4.3 MONTGOMERY COUNTY

4.3.1 METHACTON AREA SCHOOL DISTRICT (Eagleville Elementary School)

- a. **MET: Objective 16**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ISSUES – RESOLVED: None**
- f. **PRIOR ISSUES – UNRESOLVED: None**

4.3.2 PERKIOMEN VALLEY SCHOOL DISTRICT (South Elementary School)

- a. **MET: Objective 16**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ISSUES – RESOLVED: None**
- f. **PRIOR ISSUES – UNRESOLVED: None**

4.3.3 POTTSGROVE SCHOOL DISTRICT (Ringing Rock Elementary School)

- a. **MET:** Objective 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 16

Issue No.: 35-97-16-A-32

Description: The secretary received two calls stating that an SAE had been declared, but did not pass this information to the Assistant Superintendent. Consequently, the SAE checklist was not implemented, and unmet transportation needs were not sent to the Montgomery County EOC (as required by the Pottsgrove School District plan). The SAE checklist was not implemented until after 1000 hours, when a GE was confirmed by the Assistant Superintendent. (NUREG-0654, J.10.d. and J.10.g)

Corrective Action Demonstrated: At 0933, the SAE declaration was received at the Pottsgrove School District offices. This information was then given to the District's Assistant Superintendent, who in turn notified all of the District's school principals, as well as the District's transportation provider. The SAE checklist was completed, and all transportation needs were identified prior to the evacuation order.

- f. **PRIOR ISSUES – UNRESOLVED:** None

4.3.4 POTTSTOWN AREA SCHOOL DISTRICT (Edgewood Elementary School)

- a. **MET:** None
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 16

Issue No.: 35-99-16-A-31

Description: The extent-of-play agreement required that the District notify all risk schools of the initial ECL announcement and only one school of subsequent ECL announcements. Only one school was notified of the initial announcement. (NUREG-0654, J.10.d. and N.1.a.)

Recommendation: Extent-of-play agreement requirements should be clearly communicated to, and demonstrated by, all participants during the next exercise.

Schedule of Corrective Actions: Concur.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.3.5 SOUDERTON AREA SCHOOL DISTRICT (Salford Falls School)

- a. **MET:** None
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 16

Issue No.: 35-99-16-A-32

Description: The initial Alert ECL notification was made to only one school located within the EPZ and to the host school. (NUREG-0654, J.10.d. and N.1.a.)

Recommendation: The Superintendent should notify all schools within the EPZ and all schools attended by students residing within the EPZ of the initial ECL, as required by the extent-of-play agreement.

Schedule of Corrective Actions: Concur.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.3.6 SPRING-FORD AREA SCHOOL DISTRICT (Limerick Elementary School)

- a. **MET:** Objective 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

4.3.7 UPPER PERKIOMEN VALLEY SCHOOL DISTRICT (Marlborough Elementary School)

- a. **MET:** Objective 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

APPENDICES

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

The following is a list of acronyms and abbreviations used in this report.

ACP	Access Control Point
ADS	Automatic Depressurization System
A&N	Alert and Notification
ANL	Argonne National Laboratory
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Services
ATL	Assistant Team Leader
BPP	Bureau of Plans and Procedures
BRP	Bureau of Radiation Protection
CRD	Control Rod Drive
CENIC	Commonwealth Emergency News and Information Center
CFR	Code of Federal Regulations
DEP	Department of Environmental Protection
DRD	Direct-Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMC	Emergency Management Coordinator
ENC	Emergency News Center
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FTC	Field Team Coordinator
GE	General Emergency
HPCI	High-Pressure Cooler Injection
IP	Implementing Procedures
KI	Potassium Iodide
KLT	K.L. Travis and Associates

LGS	Limerick Generating Station
mR	milliRoentgen
MSIV	Main Steam Isolation Valve
MSL	mean sea level
MW	megawatt(s)
NRC	U.S. Nuclear Regulatory Commission
NTHMC	Natural and Technological Hazards Management Consulting, Inc.
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, " <i>Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,</i> " November 1980
ORO	Offsite Response Organization
PAANG	Pennsylvania Army National Guard
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PEMA	Pennsylvania Emergency Management Agency
PennDOT	Pennsylvania Department of Transportation
PIO	Public Information Officer
PSP	Pennsylvania State Police
R	Roentgen
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RO	Radiological Officer
RPD	Radiological Planning Division
RPS	Reactor Protection System
RPV	Reactor Pressure Vessel
SAE	Site Area Emergency
SOP	Standard Operating Procedure
SRV	Safety Relief Valve
TCP	Traffic Control Point
TEDE	Total Effective Dose Estimate
TL	Team Leader
TLD	Thermoluminescent Dosimeter
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the LGS exercise on September 14, 1999, and the out-of-sequence school drill conducted on September 14, 1999. Evaluator Team Leaders are indicated by the (TL) after their organization's name. Evaluator Assistant Team Leaders are indicated by the (ATL) after their organization's name. The organization each evaluator represents is indicated by the following abbreviations:

FEMA	Federal Emergency Management Agency
ANL	Argonne National Laboratory
KLT	K.L. Travis and Associates
NTHMC	Natural and Technological Hazards Management Consulting, Inc.

<u>OBSERVERS-AT-LARGE</u>	<u>NAME</u>	<u>ORGANIZATION</u>
RAC Chairman	K. Koob	FEMA
Project Officer	H. Skoczalek	FEMA

1. Biennial Plume Exercise — September 14, 1999 (1600-2300)

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
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COMMONWEALTH OF PENNSYLVANIA

Emergency Operations Center (Public Information/CENIC)	R. Van	FEMA (TL)
Emergency News Center	C. Riemer	ANL
Emergency Operations Facility (State BRP)	J. Sutch	ANL
Field Monitoring Team A	F. Bold	ANL
Field Monitoring Team B	E. Fuente	ANL
State Traffic/Access Control (Berks County Chester County Montgomery County)	C. Herzenberg	ANL
	A. Hall	ANL
	T. Boven	ANL
	T. Carroll	ANL

RISK JURISDICTIONS

BERKS COUNTY

County EOC	M. Geer	KLT (TL)
	B. Lueders	ANL (ATL)
	J. Austin	ANL
Amity Township EOC	A. Lookabaugh	ANL
Boyertown Borough EOC	B. Haught	ANL

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
BERKS COUNTY (Cont'd)		
Douglass Township EOC Route Alerting	J. Klimek N. Meshkov	NTHMC ANL

CHESTER COUNTY

County EOC	J. Price P. Roberts A. Teotia	FEMA (TL) ANL (ATL) ANL
East Pikeland Township EOC	J. Flynn	ANL
East Vincent Township EOC	R. Neisius	ANL
North Coventry Township EOC	S. Nelson	ANL
Phoenixville Borough EOC	D. Poyer	ANL
Route Alerting	D. Cray	ANL
Uwchlan Township EOC	R. Smith	ANL

MONTGOMERY COUNTY

County EOC	R. Helo C. Bebrich J. Jackson W. Waddell	FEMA (TL) ANL (ATL) ANL ANL
Green Lane Borough/ Marlborough Township EOC		
Lower Frederick Township EOC	N. DiBenedetto	NTHMC
Lower Providence Township EOC	C. McCoy	ANL
Route Alerting	J. Karvelas	ANL
Pottstown Borough EOC	B. Neidermeyer	NTHMC
Schwenksville Borough EOC	K. Picel	ANL
Upper Frederick Township EOC	D. Moffet	ANL
West Pottsgrove Township EOC	J. Zadra	ANL

2. Out-of-Sequence Field Activities Drill — September 14, 1999 (1900-2130)

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
STATE AREA OFFICES		
Eastern Area (Hamburg) EOC	R. Rospenda	ANL

RISK COUNTIES

EVALUATION SITE

EVALUATOR

ORGANIZATION

BERKS COUNTY

Emergency Worker Monitoring/ Decontamination Station (Daniel Boone Complex)	K. Flynn	ANL
Reception Center (Boscov's Outlet)	H. Harrison	ANL
Mass Care/Monitoring/ Decontamination Center (Wilson High School)	E. Wojnas	ANL

CHESTER COUNTY

Emergency Worker Monitoring/ Decontamination Station (Lionville Middle School)	J. Levenson	ANL
Reception Center (Stetson Middle School)	C. Hunckler	ANL
Mass Care/Monitoring/ Decontamination Center (Fred Engle Middle School)	D. Blunt	ANL

MONTGOMERY COUNTY

Emergency Worker Monitoring/ Decontamination Station (Upper Perkiomen High School)	L. Slagle	ANL
Reception Center (Willow Grove Industrial Park)	B. Knoerzer	ANL
Mass Care/Monitoring/ Decontamination Center (Lower Moreland High School)	K. Eddy	NTHMC

SUPPORT COUNTIES

BUCKS COUNTY

Bucks County EOC	R. Kowieski	NTHMC
Reception Center (Neshaminy Mall)	T. Deaner	NTHMC
Mass Care/Monitoring/ Decontamination Center (Armstrong Middle School)	L. Poch	ANL

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
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LEHIGH COUNTY

Lehigh County EOC	G. Robinson	ANL
Reception Center (Pitt-Ohio Express Terminal)	C. Saricks	ANL
Mass Care/Monitoring/Decontamination Center (Allentown College)	P. Kier	ANL
Upper Saucon Fire Company	B. Serrano	ANL

3. Out-of-Sequence School Activities Drill — September 14, 1999 (0830-1100)

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
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BERKS COUNTY – EOC

Boyerton Area School District (Boyerton Area High School)	M. Geer	KLT
Daniel Boone Area School District (Amity Elementary Center)	K. Flynn	ANL
	H. Harrison	ANL

CHESTER COUNTY – EOC

Downingtown Area School District (Pickering Valley Elementary School)	J. Price	FEMA
Great Valley School District (Charleston Elementary School)	E. Wojnas	ANL
Owen J. Roberts School District B (No School Evacuated)	C. Hunckler	ANL
Phoenixville School District (Schuylkill Elementary School)	J. Levenson	ANL
	D. Blunt	ANL

MONTGOMERY COUNTY – EOC

Methacton Area School District A (Eagleville Elementary School)	A. Henryson	FEMA
Perkiomen Valley School District (South Elementary School)	L. Slagle	ANL
Pottsgrove School District (Ringing Rock Elementary School)	B. Knoerzer	ANL
Pottstown Area School District (Edgewood Elementary School)	K. Eddy	NTHMC
Souderton Area School District (Salford Falls School)	T. Deaner	NTHMC
	P. Kier	ANL

EVALUATION SITE

EVALUATOR

ORGANIZATION

MONTGOMERY COUNTY (Cont'd)

Spring-Ford Area School District
(Limerick Elementary School)
Upper Perkiomen Valley School District
(Marlborough Elementary School)

G. Robinson

ANL

R. Kowieski

NTHMC (TL)

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix contains descriptions of the exercise objectives scheduled for demonstration in the Limerick Generating Station (LGS) exercise on September 14, 1999. The extent-of-play was submitted by the Commonwealth of Pennsylvania, but was not approved by FEMA Region III.

The exercise objectives, contained in FEMA-REP-15, "*Radiological Emergency Preparedness Exercise Evaluation Methodology*," September 1991, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1, "*Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants*," November 1980.

Because the exercise objectives are intended for use at all nuclear power plant sites, and because of variations among offsite plans and procedures, an extent-of-play agreement is prepared by the State and approved by FEMA to provide evaluators with guidance on expected actual demonstration of specific objectives.

OBJECTIVE 1: MOBILIZATION OF EMERGENCY PERSONNEL

Demonstrate the capability to alert and fully mobilize personnel for both emergency facilities and field operations. Demonstrate the capability to activate and staff emergency facilities for emergency operations.

Expected Demonstration: The three risk counties (Berks, Chester and Montgomery), the two support counties (Bucks and Lehigh) and of the 43 risk municipalities (represented by 41 EOCs) will demonstrate mobilization in accordance with the procedures and on the dates outlined in the objective expected demonstrations in this document. As agreed with FEMA REGION III the following one-third of the risk municipalities (14 EOCs) will be evaluated.

COUNTIES	DEMONSTRATION OF EOC MOBILIZATION FOR COUNTIES	
	DATE	TIME
Berks	14 September 1999	As per confidential scenario
Chester	14 September 1999	As per confidential scenario
Montgomery	14 September 1999	As per confidential scenario
Bucks	14 September 1999	As per confidential scenario
Lehigh	14 September 1999	As per confidential scenario

RISK COUNTIES	DEMONSTRATION OF EOC MOBILIZATION FOR EVALUATED ONE-THIRD MUNICIPALITIES ON 14 SEPTEMBER 99					
	Berks	Boyertown Borough		Douglass Township		Amity Township
Chester	Uwchlan Township	East Pikeland Township	Phoenixville Borough	North Coventry Township	East Vincent Township	
Montgomery	Green Lane Borough and Marlboro Township	Lower Providence Township	Upper Frederick Township	West Pottsgrove Township	Schwenksville Borough	Lower Frederick Township
	Pottstown Borough					

All municipalities will be activated per their county plans. Above offsite response organizations will activate their EOCs in accordance with their plans and SOPs.

Additionally, notification of selected personnel for the monitoring/ decontamination centers and stations, reception centers and mass care centers will be accomplished. However, mobilization of personnel will be accomplished only to the extent necessary to demonstrate the following:

- a. One reception center in each risk and support county. These are:

COUNTY	RECEPTION CENTER LOCATION	DATE	TIME
Berks	Boscov's Outlet	14 September 99	7:00 p.m. – 9:30 p.m.
Chester	Stetson Middle School	14 September 99	7:00 p.m. – 9:30 p.m.
Montgomery	Willow Grove Industrial Park	14 September 99	7:00 p.m. – 9:30 p.m.
Bucks	Neshaminy Mall	14 September 99	7:00 p.m. – 9:30 p.m.
Lehigh	Pitt Ohio Express	14 September 99	7:00 p.m. – 9:30 p.m.

(NOTE: Monitoring does not take place at Reception Centers.)

- b. One mass care center and monitoring/decontamination center in each risk and support county will be evaluated as follows:

- (1) One mass care center and monitoring/decontamination center with the required monitoring/decontamination teams will be demonstrated during the out of sequence window. These centers and numbers of teams are:

COUNTY	MASS CARE, MONITORING/ DECON. CENTER LOCATION	NUMBER OF TEAMS	DATE	TIME
Berks	Wilson High School	7	14 September 99	7:00 p.m. – 9:30 p.m.
Chester	Fred Engle Middle School	6	14 September 99	7:00 p.m. – 9:30 p.m.
Montgomery	Lower Moreland High School	2	14 September 99	7:00 p.m. – 9:30 p.m.
Bucks	Armstrong Middle School	3	14 September 99	7:00 p.m. – 9:30 p.m.
Lehigh	Allentown College	5	14 September 99	7:00 p.m. – 9:30 p.m.

(NOTE: Monitoring takes place at Mass Care Centers.)

(2) A team (about three people) of FEMA, PEMA and county staff members will visit the balance of the one-third of the mass care centers and monitoring/decontamination centers prior to the exercise during regular work hours. The purpose of these visits would be to inspect the facilities to ensure their availability and adequacy to perform and fulfill the basic center functions. These facilities will not be set up, however, a floor plan depicting each center's layout for a real emergency will be available for the team's inspection.

These centers are: (The balance of the one-third Mass Care Centers walk down)

COUNTY	MASS CARE CENTER	DATE	TIME
Berks	Antietam Junior & Senior High School Muhlenberg Complex	August 25, 1999	9:00 a.m.
Chester	North Brandywine South Brandywine Avon Grove High School Mary Lang Elementary School	August 18, 1999	9:00 a.m.
Montgomery	Lower Moreland High School Sandy Run Middle School Springfield Township Senior High School Enfield Middle School	August 20, 1999	9:00 a.m.
Bucks	Bucks County Community College Central Bucks East High School William Tennet Complex Council Rock Junior/Senior High School Morrisville High School Lenape Junior High School William Penn Middle School Neshaminy Middle School	July 20, 1999 July 21, 1999	9:00 a.m.
Lehigh	South Mountain Middle School Salisbury High School Northern Lehigh Junior High School Northern Lehigh Senior High School Northwestern Lehigh High School	June 24, 1999	9:00 a.m.

- (3) The capability of the remaining one-third monitoring/decontamination teams to perform their basic responsibilities would be verified by Region III outside the exercise via visits to a location(s) designated by the county EOC which is responsible for staffing the radiological monitoring and decontamination centers. These visits would include a review of each county's training records for monitoring and decontamination personnel, available equipment, and monitoring procedures. These organizations and numbers of teams are:

COUNTY	DEMONSTRATION LOCATIONS	NUMBER OF TEAMS	DATE	TIME
Berks	Wilson High School	7	14 September 99	7:00 p.m. - 9:30 p.m.
Chester	Fred Engle Middle School	17	14 September 99	7:00 p.m. - 9:30 p.m.
Montgomery	Lower Moreland High School	8	14 September 99	7:00 p.m. - 9:30 p.m.
Bucks	Eddington Fire Company at Armstrong Middle School	18	14 September 99	7:00 p.m. - 9:30 p.m.
Lehigh	Upper Saucon Fire Company	17	14 September 99	7:00 p.m. - 9:30 p.m.

- c. EMERGENCY WORKER monitoring and decontamination station for each Risk County. They are:

COUNTY	MONITORING AND DECONTAMINATION STATIONS (EMERGENCY WORKERS)	# OF TEAMS	DATE	TIME
Berks	Daniel Boone Complex	2	14 September 99	7:00 p.m. - 9:30 p.m.
Chester	Lionville Middle School	2	14 September 99	7:00 p.m. - 9:30 p.m.
Montgomery	Upper Perkiomen High School	2	14 September 99	7:00 p.m. - 9:30 p.m.

- d. One hearing impaired notification team from one municipality in each risk county. They are:

COUNTY	HEARING IMPAIRED NOTIFICATION TEAM MUNICIPALITY	DATE	TIME
Berks	Douglass Township	14 September 99	7:00 p. m. - 9:30 p. m.
Chester	Phoenixville Borough	14 September 99	7:00 p. m. - 9:30 p. m.
Montgomery	Lower Providence Township	14 September 99	7:00 p. m. - 9:30 p. m.

- e. Bureau of Radiation Protection teams will be pre-positioned.

- f. County and municipal EOCs will initiate or describe their call-down and necessary backup procedures in accordance with their plans.

PREVIOUS ISSUES: None.

OBJECTIVE 2: FACILITIES - EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT

Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.

Expected Demonstration: County and municipal EOCs will show the facilities, work environment, communications, maps, and displays to support emergency operations; that procedures are followed; and that access to the facility is controlled. This includes demonstration of the availability of maps and displays showing the plume pathway emergency planning zone (EPZ); evacuation routes; weather information; and emergency classification levels (ECL). Maps should identify familiar landmarks and boundaries. These data may be displayed through the use of map overlays, computer graphics, or other means. Each facility used for emergency operations should have a status board or some means for visual display of information that can be used to record and maintain display of key events and related protective actions.

PRIVIOUS ISSUES: 35-97-02-A-22 (Green Lane/Marlboro EOC)

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the capability to direct and control emergency operations.

Expected Demonstration: Full demonstration in accordance with respective plans by risk and support counties and risk municipalities.

PREVIOUS ISSUES: 35-97-03-A-10 (Chester EOC) 35-95-03-A-20 (Montgomery EOC)

OBJECTIVE 4: COMMUNICATIONS

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

Expected Demonstration: Full demonstration in accordance with respective plans. More than one communications system should be used in the exercise with one independent of the commercial telephone system.

PREVIOUS ISSUES: 35-97-04-A-01 (BRP Team A) 35-97-04-A-04 (BRP Team B)

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.

Expected Demonstration: According to their plans, Berks, Chester, and Montgomery Counties predistribute direct-reading dosimeters (DRD), CD V-750s, thermoluminescent dosimeters (TLD), potassium iodide (KI), and appropriate forms to the risk municipalities. For this exercise, the following will be accomplished:

- a. All counties and municipalities verify quantities (using inventory sheets of dosimetry, TLDs and KI at storage locations. KI expiration dates will be recorded on inventory sheets.
- b. DRDs, TLDs and KI will not be moved from storage locations; boxes will be labeled but not opened. Inventory sheets for KI will be posted on the sealed boxes.
- c. A record of an annual inspection will be available at the risk county for all direct-reading dosimeters reading in roentgens.

Emergency workers who would be issued dosimetry are expected to know radiation exposure limits. Further, they should be knowledgeable regarding the reading of direct-reading dosimeters. Players may ask other players to clarify radiological information.

Radiological briefings will be conducted at each risk County and risk Municipal EOC. The briefings may be pre-recorded. A staff member will be prepared to provide clarification or be knowledgeable on the required information.

Proper use of an Area/Demonstration Kit will be demonstrated in all risk counties and its components can be used for the radiological briefing. All risk counties and risk municipalities will demonstrate and brief dosimetry in accordance with their plan (individual issue of DRDs and TLDs) using one demonstration kit consisting of 2 operational DRDs, 1 CD V-750, 8 simulated TLD, 6 bottles of "Exercise use only" KI and 7 Dosimetry/KI Report Forms. Simulated control TLDs and forms will be packaged for pickup per the county plan.

Hearing impaired notification teams and traffic and access control point personnel will have operational DRDs, simulated TLDs, and "Exercise use only" KI from demonstration kits. Members of each route alert team and traffic and access control point personnel will be briefed regarding the use of their dosimetry, exposure limits, and recording requirements. (If the departure location of the notification teams is other than from the municipal EOC, the evaluator may listen to a telephonic briefing). One member of each hearing impaired notification team and one traffic or access control point person will demonstrate DRD usage prior to dispatch. All will be fully knowledgeable of the procedures for their use. Players may ask other players to clarify radiological information.

Monitors at monitoring/decontamination centers and the emergency worker monitoring/decontamination stations will be prepared to demonstrate monitoring and decontamination procedures using CD V-700s. Simulated TLDs will be provided to monitors. For this exercise maximum of eight simulated TLDs will be available at each location. Monitoring/decontamination centers and station personnel are not issued DRDs/KI since the centers/stations are outside the plume EPZ. See Objective 18.

The FEMA evaluator will select a risk county team leader, coordinator or other emergency worker supervisor and ask that person about emergency worker exposure limits and the related decision process regarding the replacement of an emergency worker who is approaching an exposure limit.

Players may ask other players to clarify radiological information.

PREVIOUS ISSUES:

35-97-05-A-02	(BRP Team A)	35-97-05-A-05	(State Police)
35-97-05-A-09	(Douglass EOC)	35-97-05-A-06	(Berks EOC)
35-97-05-A-15	(Spring City EOC)		

OBJECTIVE 6: FIELD RADIOLOGICAL MONITORING - AMBIENT RADIATION MONITORING

Demonstrate the appropriate use of equipment and procedures for determining field radiation measurements.

Expected Demonstration: Measurements will be made by Department of Environmental Protection (DEP), Bureau of Radiation Protection (BRP), in accordance with the State Annex E, Appendix 6, and BRP Standard Implementing Procedures (SIP). Two mobile air sampling teams from BRP (Conshohocken Office) will demonstrate ambient radiation monitoring. Field teams will be equipped with appropriate dosimetry and KI. Both teams will be evaluated by FEMA. Each team will perform three actual measurements at predetermined monitoring points. Three additional measurements will be simulated and forwarded for inclusion in the play of the exercise by each team. Evaluators will meet the Conshohocken Field Teams at the BRP Conshohocken Office at 1530, September 14 for the purpose of REP-15 checklist completion and demonstration.

PREVIOUS ISSUES: 35-97-06-A-03 (BRP Team A)

OBJECTIVE 7: PLUME DOSE PROJECTION

Demonstrate the capability to develop dose projections and protective action recommendations (PAR) regarding evacuation and sheltering.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None

OBJECTIVE 8: FIELD RADIOLOGICAL MONITORING - AIRBORNE RADIOIODINE AND PARTICULATE ACTIVITY MONITORING

Demonstrate the appropriate use of equipment and procedures for measuring airborne radioiodine concentrations as low as 10^{-7} (0.0000001) microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.

Expected Demonstration: Measurements will be made by BRP personnel in accordance with the State Annex E, Appendix 6, and BRP SIPs. Two mobile air sampling teams from BRP (Conshohocken Office) will demonstrate the use of equipment and procedures for radioiodine and particulate activity sampling and analysis. Field teams will be deployed during the exercise to a minimum of two predetermined sampling locations. An actual air sample will be taken at the first predetermined location. Teams will then take additional simulated air samples, as directed, at additional locations, if conditions are appropriate for radioiodine sampling. In place of silver zeolite cartridges, charcoal cartridges will be used for the exercise. Evaluators will meet the field teams as discussed in Objective 6.

PREVIOUS ISSUES: None

OBJECTIVE 9: PLUME PROTECTIVE ACTION DECISION MAKING

Demonstrate the capability to make timely and appropriate protective action decisions (PAD).

Expected Demonstration: This objective is evaluated at the State level. For LGS exercise, this will not be demonstrated at the State level because it has been demonstrated this year.

LGS Risk counties have agreed the County Commissioners and Emergency Management Coordinators and key staff will discuss the relevant factors with the FEMA evaluator in case the counties, as an exception to normal procedures, were required to make PADs. The following relevant factors should be considered:

- Plant conditions and classification level.
- Projected dose (if expertise is available) based on release estimates and meteorological conditions.
- Protective action guides.
- Shelter availability.
- Evacuation time estimates.
- Relative dose savings (if expertise is available) between evacuation and sheltering.
- Risk from evacuation.
- Weather conditions.

PREVIOUS ISSUES: None

OBJECTIVE 10: ALERT AND NOTIFICATION

Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway EPZ and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

Expected Demonstration: This demonstration will be tied to an emergency information/protective action recommendation or order message. The 15-minute time frame begins when the Senior State Official reaches a decision resulting in the need to activate the Alert and Notification System. Actual activation of the sirens and the EAS system will not be required for this exercise.

Administrative procedures will be demonstrated to include: the decision process, notification to the risk counties and subsequent notification to the 43 risk municipalities (41 Emergency Operations Centers), EAS announcement preparation or selection. Media Advisories will be prepared to supplement the basic EAS message advisory. If more than one activation of the Alert and Notification System is required, the entire sequence will be exercised each time and siren and EAS activation will continue to be simulated.

During the exercise, PEMA will inform the risk counties when to simulate activation of the sirens. Risk counties will FAX a copy of any previously uncoordinated EAS messages to the State EOC and the utility Emergency News Center following each simulated EAS broadcast. Backup route alerting will be explained at the risk county EOC; route alerting will not be demonstrated.

Notification of the hearing impaired will be demonstrated with the actual dispatching of hearing impaired notification teams required for only one preselected risk municipality in each risk county. Each county will select a municipality that has a hearing impaired person(s), provided there is at least one within the EPZ area. Municipalities selected by each county are listed in Expected Demonstration, Objective 1. The following procedures will be used:

- (a) Select one route that includes the residence of one or more hearing impaired persons.
- (b) The hearing-impaired notification team will be briefed and provided the route information, the name(s) and addresses (es) of the hearing impaired, and a prescribed message to instruct the hearing impaired to take the proper protective action. (If the departure location of the notification team is other than from the municipal EOC, the evaluator may listen to a telephonic briefing.)
- (c) An evaluator will accompany the team making the hearing impaired notification and will travel to the residence of each hearing impaired person or persons. No contact with the hearing impaired will be made.

- (d) When the Federal evaluator has arrived at the hearing impaired notification team's location, the team will notify the risk municipal EMC that they are ready for the demonstration. The demonstration will be initiated during the demonstration window of 7:00 to 9:30 p.m. the date of the exercise at the discretion of each municipal coordinator.
- (e) The names and addresses of the hearing impaired are considered private information and will not be included in any report, nor removed from the exercise area.

Remaining risk municipalities are required to demonstrate all hearing impaired notification related activities up to and including a pre-dispatch briefing, but the teams will not be dispatched.

PREVIOUS ISSUES: None

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

Expected Demonstration: Whenever siren activation is simulated, appropriate prepared or prescribed EAS announcements for information or action will be selected and Media Advisories will be prepared to supplement the basic EAS message, as necessary. The EAS broadcast will be simulated. Each risk county will demonstrate contact with its EAS station or simulate self activation of EAS broadcast.

PREVIOUS ISSUES:

35-97-11-A-17 (Montgomery EOC)

35-97-11-A-18 (Montgomery EOC)

OBJECTIVE 12: EMERGENCY INFORMATION - MEDIA

Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

Expected Demonstration: Arrangements for the regular exchange of information between organizations' spokespersons will be made during an emergency. Coordinated press releases will be issued by the Commonwealth Emergency News and Information Center (CENIC) and the utility's media center.

Both risk and support counties will prepare news releases; the news releases will be coordinated with PEMA and appropriate counties prior to release if information in the news release has more than originating county impact and deviates from information already coordinated in planning documents. Copies of news releases will be furnished to the CENIC, utility, and to other risk/support counties for exchange of information purposes.

Risk counties must conduct at least one press briefing in the presence of a FEMA evaluator. The press briefing will be an actual demonstration and will be executed regardless of audience size. Montgomery County will demonstrate the briefing at their Emergency Operations Center and rest of the counties will demonstrate the briefing at their normal locations. Support counties are not required to conduct press briefings. Municipalities may refer press inquiries to the appropriate county public information officer.

PREVIOUS ISSUES:

35-97-12-A-07 (Berks EOC)	35-97-12-A-11 (Chester EOC)
35-97-12-A-12 (Chester EOC)	35-97-12-A-19 (Montgomery EOC)
35-95-12-A-22 (Montgomery EOC)	35-97-12-A-27 (Bucks EOC)
35-97-12-A-28 (Lehigh EOC)	

OBJECTIVE 13: EMERGENCY INFORMATION - RUMOR CONTROL

Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

Expected Demonstration: The risk and support counties will activate their rumor control activity. Risk and support county rumor control activities will be staffed with a minimum of two persons. Injects will be prepared to exercise each location with no more than 16 calls to identify rumor trends.

PREVIOUS ISSUES:

35-97-13-A-13 (Chester EOC)	35-97-13-A-29 (Lehigh EOC)
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OBJECTIVE 14: IMPLEMENTATION OF PROTECTIVE ACTIONS - USE OF KI FOR EMERGENCY WORKERS, INSTITUTIONALIZED INDIVIDUALS, AND THE GENERAL PUBLIC

Demonstrate the capability and resources to implement KI protective actions for emergency workers, institutionalized individuals, and, if the State plan specifies, the general public.

Expected Demonstration: See expected demonstration for Objective 5 for county details.

A recommendation for risk counties will be made by BRP based on the scenario and an advisory shall be issued by the Secretary, Department of Health, as to whether emergency workers should or should not take KI. If the risk counties receive the message to not take KI from the state EOC, the EMC may decide whether or not to disseminate the message to the risk municipalities. If the decision is made to take KI, EOCs will demonstrate the ability to fill out the appropriate form used in recording the taking of KI.

Availability of KI resources will be demonstrated through an inspection of county, municipal and separate facility storage areas. Sealed containers of bottles of KI will not be opened. However, proof of the expiration dates of the contents of each container must be shown to the evaluator. The distribution procedure to emergency workers will be described to the FEMA evaluator.

Hearing impaired notification teams, traffic and access control point personnel and risk municipal EOC staff persons will have simulated KI and will be fully knowledgeable of the procedures for KI use.

The Pennsylvania State plan does not call for distribution of KI to the general public.

PREVIOUS ISSUES: None

OBJECTIVE 15: IMPLEMENTATION OF PROTECTIVE ACTIONS - SPECIAL POPULATIONS

Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

Expected Demonstration: Lists of people with special needs are maintained at municipal level and copies are available at the risk counties. Emergency information distributed to the plume EPZ population contain telephone numbers for use by persons with special needs. Procedures for updating the special needs lists will be explained to the evaluator upon request.

Calls will be made by Chester and Montgomery Counties to hospitals and nursing homes for patient census. Once this has been completed, subsequent calls may be simulated. Record keeping requirements are the same as for transportation providers.

Contact will be made by county EOCs with providers of buses, ambulances and other vehicles to determine availability (vehicles will not be dispatched). Actual contact calls must be made to each type of service provider until all resource needs have been met. For example, if 50 buses are required, the separate providers must actually be contacted until commitments for 50 buses have been obtained. Once this has been completed, subsequent calls may be simulated. A record of the availability (outcome, name and provider) will be provided to FEMA, PEMA and the County EMA upon request.

PREVIOUS ISSUES: 35-97-15-A-08 (Boyertown EOC)

OBJECTIVE 16: IMPLEMENTATION OF PROTECTIVE ACTIONS - SCHOOLS

Demonstrate the capability and resources necessary to implement protective actions for schoolchildren within the plume pathway EPZ.

Expected Demonstration: The demonstration for all school districts will be performed out of sequence on September 14, 1999.

The scenario will provide for demonstrating this objective during normal school hours and therefore out of sequence with the remainder of the exercise. A demonstration period of 8:30 - 11:00 a.m. has been established for this objective. The demonstration will not begin before 8:30 but if not completed by 11:00 the period may be extended so that the school districts will be able to fully benefit from the activity.

Risk School districts with schools in the EPZ and those districts outside the EPZ but with students living within the EPZ will participate and will be evaluated by FEMA. These include (all schools within EPZ):

RISK COUNTIES			
Berks	Chester	Montgomery	
Boyertown Area	Downingtown Area	Methacton Area	Pottstown Area
Daniel Boone Area	Great Valley	Perkiomen Valley	Souderton Area
-	Phoenixville Area	Pottsgrove	Spring-Ford Area
-	Owen J. Roberts	Upper Perkiomen Valley	

Risk county EOCs will be appropriately staffed for this demonstration to receive school scenario messages and disseminate them to the participating school districts.

The district superintendent or other appropriate official will meet with the FEMA evaluator to discuss the district plans. In addition, in the risk school districts and the school districts which have students who reside in the EPZ, the FEMA evaluator will also meet with the principal or other appropriate official of one school per district.

The initial ECL announcement will be transmitted from the State EOC to the risk county EOC via dedicated phone line (Blue Phone). The risk county EOC will notify each of their risk school districts and school districts which have students residing in the EPZ. The risk school districts and the school districts with students who reside in the EPZ will notify all their risk schools and those schools which have students who reside in the EPZ.

Subsequent ECL, evacuation and other exercise announcements will be transmitted by the State EOC to the risk county EOC. The risk county EOC will, in accordance with its plans, notify the risk school districts and school districts which have students who reside in the EPZ via dedicated phone line (Blue Phone). The school districts, however, will only be required to notify the one designated school per district of the subsequent ECL, evacuation and other announcements related to the exercise. The demonstration will include movement of one vehicle (not necessarily a bus) by a driver per risk school district over an evacuation route to the host school, but will not require actual student involvement.

School districts outside the EPZ but with students living within the EPZ will not demonstrate evacuation. The district superintendent or other appropriate official as well as the transportation supervisor will be prepared to discuss the dispatch of the buses, pick up points, loading procedures for the students/staff and the destinations.

PREVIOUS ISSUES:

35-97-16-A-30 (Montgomery EOC)
35-97-16-A-32 (Pottsgrove S.D.)

35-97-16-A-31 (Montgomery EOC)

OBJECTIVE 17: TRAFFIC AND ACCESS CONTROL

Demonstrate the organizational capability and resources necessary to control evacuation traffic flow and access to evacuated and sheltered areas.

Expected Demonstration: Requirements for establishing traffic and access control points for the evacuated area will be addressed administratively at the state, county, and municipal EOCs, in accordance with the plans. Actual field demonstrations will be:

One PSP Traffic Control Point (TCP) per risk county. One PSP Access Control Point (ACP) per risk county. The TCP/ACPs to be demonstrated are combined in Berks and Chester Counties.

These (TCP and ACP) are as follows:

RISK COUNTY	TCP LOCATIONS	ACP LOCATIONS
BERKS	Post # 6 (Rt. 422 and SR 2025 – Amity Township)	- SAME AS TCP -
Chester	Post # 46 (Rt. 29 and SR 1026 – Charlestown Township)	- SAME AS TCP -
Montgomery	TCP # 78-81 (Rt. 73 and Rt. 113 – Skippack Township)	ACP # 324-61(Rt. 113 and Salfordville Rd – Lower Salford Township)

The Pennsylvania State Police will brief at the Skippack Station (2047 C Bridge Road, Schwenksville), actually deploy to and station one person at the TCP/ACP specified above.

One TCP in each participating risk municipality with a police force or one TCP for each regional police force with a TCP assigned in its plan will demonstrate all preparation duties including TCP responsibilities and radiological briefing, except dispatch of persons to the TCP site. These municipalities/regional police forces are:

RISK COUNTIES		
Berks	Chester	Montgomery
Amity Township	East Coventry Township	Marlborough Township
Boyerstown Borough	East Vincent Township	Collegeville Borough
Colebrookdale Township	North Coventry Township	Douglass Township
Douglass Township	Phoenixville Borough	Green Lane Borough
-	Schuylkill Township	West Pottsgrove Township
-	Spring City Borough	Limerick Township
-	Upper Uwchlan Township	Upper Pottsgrove Township
-	West Pikeland Township	Lower Providence Township
-	West Vincent Township	Lower Salford Township
-	Uwchlan Township	New Hanover Township
-	East Pikeland Township	Pottstown Borough
-	-	Royersford Borough
-	-	Schwenksville Borough
-	-	Upper Providence Township

The PSP TCP/ACP demonstrations will be performed out of sequence in a demonstration window of 7:00 - 9:30 p.m. on the day of the exercise at Skippack Station.

Municipal and county staffs will be prepared to brief the FEMA evaluator on actions to be taken should there be an impediment to evacuation on a designated route.

PREVIOUS ISSUES: None.

OBJECTIVE 18: RECEPTION CENTER - MONITORING, DECONTAMINATION, AND REGISTRATION

Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

Expected Demonstration: In Pennsylvania, All LGS counties provide monitoring/ decontamination at centers located with mass care centers rather than at reception centers. Each risk and support county will demonstrate one reception center during the out-of-sequence window operated by one manager and at least one assistant. See Objective 1, Expected Demonstration (page 1-6), for reception center locations.

At each reception center, a minimum of three volunteer evacuees will be processed, briefed, issued the appropriate strip map, and instructed to proceed to a mass care center designated for

demonstration of monitoring, decontamination, and registration. Attempts will be made to solicit volunteers who are not personally involved in the REP program.

One mass care center and one monitoring/decontamination center per risk and support county will be demonstrated during the out-of-sequence window. See Objective 1, Expected Demonstration (pages 1-6 to 1-8), for the evaluation procedures and locations for these centers.

The risk and support counties will provide space at designated mass care centers for operation of monitoring/decontamination centers. Schematics of these monitoring/decontamination centers will be available to show organization within the facility and space management for monitoring and for decontamination of the evacuating public. Procedures will be demonstrated to show minimizing contamination of the facility(ies) and separation of contaminated and non-contaminated (clean) individuals.

Each team, consisting of a minimum of two persons (monitor and recorder), will monitor a minimum of two volunteer evacuees, complete the Monitoring/Decontamination Report Form (either by demonstration or explanation), and instruct the evacuees to proceed to the mass care registration points for further processing. The teams will demonstrate: radiological monitoring of at least one vehicle and the simulated decontamination of at least two evacuees, one unable to be decontaminated based on controller inject data. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Transporting of the contaminated person will be explained but not demonstrated. A CD V-700, or other survey meter, will be issued to the team. TLDs will be simulated.

Radiation contamination data for the evacuees and vehicle will be included in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pads; with the exception of long runs of plastic covered with paper which will not be demonstrated, but the materials will be available and explained. Positioning of a fire apparatus on-site may be simulated if otherwise required.

PREVIOUS ISSUES: 35-97-18-A-21 (Montgomery M/D Center)

OBJECTIVE 19: CONGREGATE CARE

Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

Expected Demonstration: The risk and support counties will demonstrate the operation of one mass care center each during the out-of-sequence window. Floor plans with flow diagrams of the mass care centers will be available to show organization within the facility and space management during a real emergency. Mass care center locations are collocated with monitoring/decontamination centers listed in Objective 1, Expected Demonstration (page 1-6 to 1-8).

The balance of the one-third of the mass care centers will be evaluated as specified in Objective 1, Expected Demonstration (pages 1-6 to 1-8).

Personnel, at a minimum, will consist of one manager and one assistant for each mass care center opened during the out-of-sequence window. The responsible American Red Cross chapter will show the source and quantities by job functional description to be provided to mass care centers to support the 24-hour operation. The responsible Red Cross Chapter (s) will be visited during business hours on September 14 by a FEMA evaluator to provide information regarding the 24-hour operation. Schematics of these mass care centers will be available to show organization within the facility and space allocation for registration and sheltering the evacuating public. Necessary signs, directional arrows and forms will be available and used to demonstrate registration, at a minimum, of one evacuee needing housing. Evacuees will be shown the location where they would be housed in an actual situation. Bedding, cots, food, etc. normally associated with mass care will not be moved to the site, but the sources of those items should be explained to FEMA evaluators. This out-of-sequence demonstration window will be from 7:00 - 9:30 p.m. on September 14, 1999.

ARC chapters and points of contact are as follows:

(Montgomery & Chester Counties)
Southeast Pennsylvania Chapter
23rd & Chestnut Streets
Philadelphia, PA 19103
Jim Bloomenstock, 215-299-4000

(Lehigh County)
Lehigh Valley Chapter
2200 Avenue A
Bethlehem, PA 18017-2181
Nina Johnson, 610-865-4400

(Berks County)
Berks County Chapter
701 Centre Avenue
Reading, PA 19601-2507
Adrian Grieve, 610-375-4383

(Bucks County)
Southeast Pennsylvania Chapter
23rd & Chestnut Streets
Philadelphia, PA 19103
Jim Bloomenstock, 215-299-4000

PREVIOUS ISSUES: None.

OBJECTIVE 20: MEDICAL SERVICES - TRANSPORTATION

Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.

Expected Demonstration: This objective was demonstrated on May 12, 1999, at Reading Hospital and Medical Center, Berks County.

PREVIOUS ISSUES: None.

OBJECTIVE 21: MEDICAL SERVICES - FACILITIES

Demonstrate the adequacy of the equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

Expected Demonstration: Demonstrated on the date and at the place shown for Objective 20.

PREVIOUS ISSUES: None.

OBJECTIVE 22: EMERGENCY WORKERS, EQUIPMENT AND VEHICLES - MONITORING AND DECONTAMINATION

Demonstrate the adequacy of procedures for monitoring and decontaminating emergency workers, equipment, and vehicles.

Expected Demonstration: Each risk county will designate one monitoring/decontamination station for emergency workers to demonstrate the monitoring and simulated decontamination of one volunteer emergency worker and one vehicle. Their locations are listed in Expected Demonstration, Objective 1.

Station personnel will consist of a minimum of one monitor and one recorder and sufficient personnel to demonstrate monitoring of at least one vehicle. Schematics of these monitoring/decontamination stations will be available to show organization and space management within the facility. The evaluator will request that decontamination procedures be explained after the vehicle which has simulated contamination has been monitored. One CD V-700, or other survey meter, will be issued to each monitoring/decontamination team. One vehicle and/or piece of equipment will not be able to be decontaminated. Simulated radiation contamination data will be included in the scenario package. Set-up of the facility will be performed as closely as possible to that for an actual emergency with all route markings in place including step-off pads; with the exception of long runs of plastic covered with paper which will not be demonstrated, but the materials will be available and explained. This demonstration will be conducted out-of-sequence during a window of 7:00 to 9:30 p.m., September 14, 1999.

PREVIOUS ISSUES: None

OBJECTIVE 23: SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER)

Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

OBJECTIVE 24: POST-EMERGENCY SAMPLING

Demonstrate the use of equipment and procedures for the collection and transportation of samples from areas that received deposition from the airborne plume.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES:

LIMX88-08R (Agriculture Sampling Team)

LIMX88-06R (Water Sampling Team)

LIMX88-07R (Water Sampling Team)

OBJECTIVE 25: LABORATORY OPERATIONS

Demonstrate laboratory operations and procedures for measuring and analyzing samples.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

OBJECTIVE 26: INGESTION EXPOSURE PATHWAY — DOSE PROJECTION AND PROTECTIVE ACTION DECISION MAKING

Demonstrate the capability to project dose to the public for the ingestion exposure pathway and to recommend protective actions.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

OBJECTIVE 27: INGESTION EXPOSURE PATHWAY — PROTECTIVE ACTION IMPLEMENTATION

Demonstrate the capability to implement protective actions for the ingestion exposure pathway.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

OBJECTIVE 28: RELOCATION, RE-ENTRY, AND RETURN — DECISION MAKING

Demonstrate the capability to develop decisions on relocation, re-entry, and return.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

OBJECTIVE 29: RELOCATION, RE-ENTRY, AND RETURN — IMPLEMENTATION

Demonstrate the capability to implement appropriate measures for relocation, re-entry, and return.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

OBJECTIVE 30: CONTINUOUS, 24-HOUR STAFFING

Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

Expected Demonstration: A complete shift change, including leadership positions, will be demonstrated at the locations shown below; Chester EOC and Montgomery EOC will demonstrate limited change as shown. A full briefing will be provided during the shift change for each position. The responsible EMC can demonstrate the shift change through a complete one-time shift change or through a position-by-position change throughout the evening. Off-shift personnel are permitted to be present in the EOC; however, they are not to interact with staff members who are being evaluated.

PREVIOUS ISSUES:

35-97-30-A-14 (Chester EOC-PennDOT)	35-97-30-A-16 (Uwchlan EOC)
35-97-30-A-20 (Montgomery EOC- PennDOT, PSP, PAANG, County Trans. Group)	
35-97-30-A-23 (Green Lane/Marlboro EOC)	35-97-30-A-24 (Lower Frederick EOC)
35-97-30-A-24 (Schwenksville EOC)	35-97-30-A-26 (West Pottsgrove EOC)
LIMX91-31R (Lower Frederick EOC)	

OBJECTIVE 31: OFFSITE SUPPORT FOR THE EVACUATION OF ONSITE PERSONNEL

Demonstrate the capability to provide offsite support for the evacuation of onsite personnel.

Expected Demonstration: Montgomery County will demonstrate the Offsite support request for evacuation of onsite personnel.

PREVIOUS ISSUES: None.

OBJECTIVE 32: UNANNOUNCED EXERCISE OR DRILL

Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

OBJECTIVE 33: OFF-HOURS EXERCISE OR DRILL

Demonstrate the capability to carry out emergency response functions during an off-hour exercise or drill.

Expected Demonstration: Not applicable.

PREVIOUS ISSUES: None.

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events – Exercise Scenario – used as the basis for invoking emergency response actions by OROs during the LGS exercise on September 14, 1999.

This exercise scenario was submitted by the Commonwealth of Pennsylvania, but was not approved by FEMA Region III.

Specific scenario events were generated during the exercise by the Plant Reference Simulator computer, operated by PECO Energy Company at the site. The scenario used actual field monitoring team data transmissions and actual meteorological conditions. Backup information was available in case the simulator computer malfunctioned.

During the exercise, controllers from the Commonwealth of Pennsylvania gave "inject messages," containing scenario events or simulated data, to those persons who would normally receive notification of such events, in order to invoke response actions by OROs.

The summary presented in this appendix is a compilation of exercise scenario materials submitted by the Commonwealth of Pennsylvania and PECO Energy Company. Events at the plant site that are not pertinent to the ORO response have been omitted.

SCENARIO SUMMARY

Initial Conditions

Unit 1 – 100% power for the last 183 days. All Unit 1 systems and equipment are operable with the following exceptions:

- The High Pressure Coolant Injection (HPCI) system is out of service for replacement of the primary speed pickup in the front standard. Technical Specification Action Statement 3.5.1.C.1 has been in effect since 0800. A maintenance crew is planning to complete the work by 1500.
- The 1A drywell chiller is out of service for replacement of a freon seal. The chiller is expected to be returned to service in 48 hours.
- Instrument gas pressure cannot be maintained in the 1B header. The 1B Primary Containment Instrument Gas isolation valve (HV-059-129B) is tagged closed because of a leak in the gas header.

Unit 2 – Refueling is in progress with fuel shuffles in the spent fuel pool today.

Weather forecast – Mostly sunny with light winds from the east. Highs in the mid to high 70s. The skies will become cloudy tonight with lows in the mid 40s. Fair and warm tomorrow with winds shifting to the west at 5 to 10 miles per hour. The high tomorrow will be 78 to 82 degrees. Probability of precipitation is 30% tonight, decreasing to 10% by tomorrow evening.

At 1530, the exercise commences. By 1545, a fire alarm sounds for the Auxiliary Boiler Building (event 1). Upon arrival, the fire brigade discovers a large fire involving a major portion of the “B” Auxiliary Boiler; the fire is being fed from a broken fuel oil line. Offsite assistance is required and fire company response is expected. The “A” and “C” Auxiliary Boilers are also inoperable due to the loss of control wiring in their respective control panels. The Shift Manager should declare an Unusual Event based upon the Emergency Action Level (EAL) of 8 – External Events (a fire within SE-8 Plant Vital Structures is not extinguished within 15 minutes of the control room notification of a control room alarm). The fire is extinguished after offsite assistance arrives.

At 1615, a reactor level transmitter fails (Event 2). This failure results in a half scram signal, but no Reactor Protection System (RPS) actuation occurs. The operators enter OT-117 (RPS Failure) and subsequently discover that neither channel of the RPS can be initiated manually. The operators enter T-101, Reactor Pressure Vessel (RPV) Control, and immediate actions are carried out. The Alert should be declared based upon the EAL of 2.0 – RPV (in which the automatic RPS shutdown of the reactor should occur due to the RPS set point being exceeded and failure of the automatic RPS system to make the reactor shut down). At this point the Operations Support Center, Technical Support Center, and Emergency News Center are activated and the Emergency Operation Facility is being staffed. The attempted manual initiation of the redundant reactivity control system causes a successful Alternate Rod Insertion initiation before standby liquid control initiation.

At 1645, an inadvertent Group 1 isolation occurs, causing the Main Steam Isolation Valves (MSIV) to close (Event 3). Following the isolation, a steam leak develops upstream of the inboard MSIVs, and the dry well pressure increases.

High dry well pressure, at this time, also causes a Group IV (includes instrument gas) isolation. The 1A Primary Containment Isolation Gas header isolation valve is damaged during closure and cannot be reopened. With the 1B valve out of service, instrument gas cannot be restored to the non-automatic depressurization system (ADS) safety relief valves (SRV) (Event 4), disabling their manual opening capability.

Improper re-assembly of the ADS SRVs during a previous outage causes a slow upward drift of the setpoint and disables the manual opening capability (Event 5). At 1725, the 1B Control Rod Drive (CRD) pump trips (Event 7) due to a clogged suction strainer.

At 1745, while investigating the 1B CRD pump trip, a maintenance worker falls (Event 8). The pump suction pressure gauge piping penetrates his thigh. The worker becomes contaminated, requiring transportation to a designated offsite medical services (MS-1) hospital.

With the HPCI, Reactor Core Isolation Cooling, and main condenser unavailable for pressure control, decay heat increases pressure to the point where a manual operation of an SRV is attempted. The operators discover that they cannot reduce the reactor's pressure. Alternate manual operation is attempted from the Auxiliary Equipment Room, Remote Shutdown Panel, and possibly the manual initiation of the ADS. All of these attempts are unsuccessful.

The reactor water level slowly decreases as injection with the CRD fails to overcome the rate of inventory loss through the leak to the dry well. At approximately 1800, the reactor level drops below 161 inches and the dry well pressure is greater than 10 pounds per square inch gas. The Emergency Director should declare an SAE based on the EAL of 3.0 – (Fission Product Barrier Table (a potential loss of both the fuel cladding and the Reactor Coolant System). The water level continues decreasing and fuel damage begins.

At 1930, the reactor water level cannot be restored above 204 inches and the maximum core uncover time limit is in the unsafe region. The Emergency Director should declare a GE based upon the EAL of 3.0 – Fission Product Barrier Table (a loss of any two barriers and the potential loss of the third barrier). The Emergency Response Manager should recommend the PAR to the State of evacuation of a 2-mile radius from the plant, and evacuation of the affected sector and the two adjacent sectors from 2 to 5 miles from the plant.

At 1945, a release of radioactive material begins from the primary containment to the reactor enclosure. The leak originates at the penetration of the dry well purge supply line, is processed through the Standby Gas Treatment System, and is finally released to the atmosphere.

When the HPCI system is returned to service at 2030, it is used to begin restoration of the water level in the containment. At 2045, the dry well pressure has decreased to less than 1 pound per square inch gas and the release to the environment is decreasing. At approximately 2100, the onsite drill is terminated when the correct PARs have been made and all onsite and offsite objectives have been fulfilled.

APPENDIX 5

PLANNING ISSUES

This appendix contains the Planning Issues assessed during the September 14, 1999, exercise at LGS. Planning Issues are defined as issues observed or identified in an exercise that do not address participant or organizational performance, but rather inadequacies in the plan or procedures. **A plan issue should be corrected no later than the next annual plan review and update.**

Amity Township EOC

Issue No.: 35-99-02-P-01

Description: An alternate EOC is required in Amity Township because the primary EOC is located within the 10-mile EPZ. Part 11, B.2.f. (page 14) of the *Basic Amity Township Plan* states that the EOC is outside the 10-mile EPZ, but it is approximately $\frac{3}{4}$ mile inside the zone. The plan also states that an alternate EOC is not needed. (NUREG-0654, H.3.)

Recommendation: The plan should be revised to reflect that the EOC is located within the 10-mile EPZ, and an alternate EOC should be located and used.

Schedule of Corrective Actions:

Lehigh County Monitoring/Decontamination/Mass Care Center /#1

Issue No.: 35-99-18-P-02

Description: The IPs for monitoring and decontamination activities in Lehigh County contain a few mistakes, omissions, and misleading statements.

- The range of a CD V-700 was stated to be 0-50 mR, instead of 0-50 mR/h.
- The sections on vehicle and shower monitoring provide the threshold for contamination. The section on entry monitoring does not state the threshold value; this value should be listed for consistency.
- Section II.A.1 on page 5-D-4 states "Select a reception center for conducting the monitoring operation." It should state "Select a mass care center for conducting the monitoring."
- Page 4 in the extent-of-play agreement identifies 17 monitoring teams for Lehigh County at the Upper Saucon Fire Company, which corresponds to 34 personnel because each team comprises a monitor and a recorder. Appendix 5, page 5-C-1, however, requires only 20 TLDs, 9 CD V-700s, and 20 Dosimetry/KI Report Forms. Thus, the inventory requirements

(plus spares) on page 5-C-1 are insufficient for the number of teams expected at the Saucon Fire Company, (i.e., there should be at least 34 TLDs, 17 CD V-700s, and 34 report forms).

- Appendix 5, Attachment D, Page 5-D-5, Step 8 states “Place the probe about one to two inches from the head ...” while Appendix 5, Annex E, page E-5-20, however, states to “Place the probe approximately ½ to 1 inch from the head ...”.
- Appendix 5, page 5-A-3 identifies a TLD and a Dosimetry/KI Report Form as the Category C Standard Issue. Appendix 5, Annex E, page E-5-31, however, identifies only the TLD as the Category C Standard Issue.
- Appendix 5, Attachment D, page 5-D-3 states “Recorders who do not monitor will not be issued a TLD.” Appendix 5, Annex E, page E-5-31, however, states “Each individual who meets/directs/monitors possibly contaminated people or vehicles will receive a Category C Standard Issue.” (NUREG-0654, J.12.)

Recommendation: The IPs should be reviewed and revised to correct the mistakes and inconsistencies cited above.

Schedule of Corrective Actions:

Pottsgrove School District

Issue No.: 62-99-16-P-03

Description: The Pottsgrove School District plan contains the following inaccuracies:

- On page A1-2 “Transportation Information,” of the Lower Pottsgrove School District plan, the number of buses required from the county for St. Pius X High School is listed as nine. The number of buses required for St. Pius X is ten, and the number listed as available is seven. Therefore, the number required is three.
- On page A1-3, the “Emergency Facilities” chart of the Pottsgrove School District’s plan, West-Mont Christian is listed. This school should be removed because it has moved out of the Pottsgrove School District.
- On page A2-1 “School District Notification and Organization Chart,” the West-Mont Christian School is listed and shown. This school has moved out of the Pottsgrove School District, and should be removed from the District’s notification and organization chart. (NUREG-0654, J.10.d.)

Recommendation: The plan should be revised to correct the issues cited above.

Schedule of Corrective Actions:

Montgomery County EOC

Issue No.: 35-99-12-P-04

Description: All the pre-scripted press releases (# 1-3) used in this remedial exercise at Montgomery County EOC on December 7, 1999, contained the sentence "This classification represents the ... (1st, 2nd, 3rd, 4th) most serious classification at a nuclear power station." This sentence does not clearly convey to the reader/listener the severity of the emergency classification. (NUREG-0654, E.7. and G.4.a.)

Recommendation: The pre-scripted messages should be revised whereby the wording more clearly conveys the scale of severity such as the language used in the PECO Energy Company Emergency News Center Release #2 dated December 7, 1999 at 1124.

Schedule of Corrective Actions:

Issue No.: 35-99-12-P-05

Description: The press releases used in the remedial exercise in Montgomery County on December 7, 1999, were identified as Attachments 5-3 and 5-8 to the Montgomery County RERP-E-4, Revision 0. However, these attachment #'s are not the same as contained in the Montgomery County RERP-E-4, Revision 0, Appendix 4, Public Information. (NUREG-0654, E.7. and G.4.a.)

Recommendation: The plan should be consistent and revised whereby the correct attachments are identified.

Schedule of Corrective Actions:

APPENDIX 6

ADDITIONAL PRIOR ISSUES

This appendix contains the description and status of ARCAs assessed during prior exercises at the LGS, which were (1) assessed at jurisdictions or functional entities that were exempted from demonstration at this exercise, or (2) for ingestion exposure pathway objectives not scheduled for demonstration in this exercise.

PRIOR ISSUES AT FUNCTIONAL ENTITIES NOT SCHEDULED TO BE DEMONSTRATED

Issue No.: 35-97-05-A-15 – Spring City Borough EOC

Description: The Spring City Borough RO and other emergency staff were unsure about who to contact if an emergency worker, on a route alerting or traffic control mission, obtained a DRD reading of 5 or more rem. When referring to his briefing materials, the RO determined that Chester County should be contacted because the county is responsible for authorizing activities at higher exposures. However, the plan states (on page 33) that the immediate supervisors of emergency workers (Fire Chief, Police Chief, Officer in Charge) are responsible for managing the amount of exposure an emergency worker receives. At no time during the briefing were emergency workers instructed to inform their immediate supervisor of the exposures received. They were instructed to record their readings and return their record sheets to the RO upon completion of their missions. (NUREG-0654, K.3.b. and K.4.)

Reason ARCA Unresolved: Spring City Borough was not required to be demonstrated during the September 14, 1999, LGS exercise.

Recommendation: Spring City Borough EOC should participate in the next LGS exercise.

Issue No.: 35-97-18-A-21 – Montgomery County Monitoring/Decontamination/Mass Care Center (Sandy Run Middle School)

Description: During monitoring of a simulated contaminated evacuee, the monitoring personnel brushed the covered probe along the leg of the individual. The monitor did not change the plastic bag covering the probe prior to monitoring the next individual. The plastic bag could become contaminated, potentially causing incoming clean evacuees to be classified as contaminated. (NUREG-0654, J.10.h. and J.12.)

Reason ARCA Unresolved: The Montgomery County monitoring/decontamination/mass care center (Sandy Run Middle School) was not required to be demonstrated during the September 14, 1999, LGS exercise.

Recommendation: The Montgomery County monitoring/decontamination/mass care center (Sandy Run Middle School) should participate in the next LGS exercise.

PRIOR ISSUES FOR INGESTION EXPOSURE PATHWAY OBJECTIVES

Issue No.: LIMX88-06R (Water Sampling Team)

Description: The water sampling teams were not fully briefed on the plume conditions and had no protective clothing, respirators, or radiation detection equipment. Also, they were not trained specifically for obtaining samples in a radiation situation/environment. (NUREG-0654, K.3.a.)

Reason ARCA Unresolved: Objective 24 was not required to be demonstrated during the September 14, 1999, LGS exercise.

Recommendation: Objective 24 should be demonstrated by the water sampling teams during the next LGS ingestion exposure pathway exercise.

Issue No.: LIMX88-07R (Water Sampling Team)

Description: There was no obvious control of the time the samples were to be obtained to assure they represented the radioactivity which would have been deposited in the river; i.e., to maximize the usefulness of the data obtained. (NUREG-0654, I.10.)

Reason ARCA Unresolved: Objective 24 was not required to be demonstrated during the September 14, 1999, LGS exercise.

Recommendation: Objective 24 should be demonstrated by the water sampling teams during the next LGS ingestion exposure pathway exercise.

Issue No.: LIMX88-08R (Agriculture Sampling Team)

Description: Agricultural sampling teams were not notified in a timely manner by the Pennsylvania Department of Agriculture to report to the dispatch point at the Montgomery County EOC. Since team members did not report until the termination of the exercise, no agricultural sampling procedures could be demonstrated. Also, a prior inadequacy regarding team members use of dosimetry cannot be cleared since a demonstration of proficiency was not performed. (NUREG-0654, I.8.)

Reason ARCA Unresolved: Objective 24 was not required to be demonstrated during the September 14, 1999, LGS exercise.

Recommendation: Objective 24 should be demonstrated by the agricultural sampling teams during the next LGS ingestion exposure pathway exercise.